

Aviation News

MCGRAW-HILL PUBLISHING COMPANY, INC.

AUGUST 14, 1944



Newest in the *Cobra* Line: Latest picture of Bell's new P-63 Kingcobra fighter, successor to the P-39 Airacobra, which has been an important factor in the Russians' westward drive. The P-63 is heavily-armed with a 37-mm. cannon in the propeller hub and carries .50-caliber wing guns. Its speed is quoted at approximately 400 miles an hour.

Army, Navy Surplus Planes May Go on Market Soon

Bids on personal-type aircraft will be opened under arrangements similar to those followed with DPC-owned planes.....Page 7

CAB Research Staff Analyzes Trans-Atlantic Pattern

Analysts' reports on post-war traffic volume and flow offer alternative plans based on competition on U. S. lines.....Page 44

Mail Pound-Miles Gain 51% in Year; Doubt Slump

Authorities believe high level of air mail will be retained but doubt immediate development of "all first class by air" policy.....Page 47

Labor Shift to Pre-War Jobs to Cushion Plane Cutbacks

Industry expects fully 50 percent of aircraft workers to return to regular employment and to household tasks.....Page 32

Rocket, Robot, Radio Changes Bring Tactics Revision

Rocket-powered planes capable of 500 mph. expected to set pace over battlefields of Europe shortly.....Page 23

U. S. Compiles Airworthiness Data for World Talks

Recommendations of industry on post-war problem sought for presentation to CAB and aviation division of State Dept.....Page 11



FOR GREATER SAFETY

Great pilothood, spending the weary night and day, and ready to assist the rebuilding of business tomorrow, are guided in safe flight by remarkable new instruments and electronic devices.

This safety equipment, carefully and skillfully built, must be protected from constant invisible vibrations, leading shocks, and occasional rough weather, by a mounting for suspension of proven high efficiency under all conditions.

The war-tested Robinson Vibrocheck[®] mounting, with its double neutral mass suspension, absorbs 90% of engine and propeller

vibration, and has the reserve capacity to protect vital equipment under the sudden stress of unexpected engine trouble, storms, or emergency landing.

Radio and instruments will not "go out" when needed most, and air transportation will win through to new safety records.

► A new booklet, VIBRATION CONTROL BY ROBINSON, further describes the important new development in aircraft equipment.

ROBINSON

ROBINSON AVIATION, INC.

250 FIFTH AVENUE • NEW YORK 19, N. Y.

THE AVIATION NEWS

Washington Observer

AIR POWER POLICY—Senator Murray (D., Mass.) is planning hearings based on the air power policy of the Aeronautical Chamber of Commerce, which was brought to his attention during hearings on reconversion legislation. Murray has requested that the Chamber prepare testimony for the hearings and will call in Army and Navy airmen for their views. The Murray bill received approval of the Chamber declaration, while Army airmen naturally agree that a strong air power will be necessary in the post-war period.

CHAMBER PROGRAM—While Senator Murray probably will be the first member of Congress to preside at hearings leading toward a formulation of a national air power policy, the Chamber is prepared to develop its views before any Congressional group examining the subject. The Collier and Woodsom committees in the House, as well as the full Military and Naval Affairs Committees of both Houses, probably will examine the subject of air power in some detail, so that the Murray hearings undoubtedly will be only one facet of the picture.

INDEPENDENT SURVEY BOARD—One suggestion drawing attention is that an independent survey board be appointed to report on the whole picture of post-war air power. This would be along the general lines of the Morrow Board, although the Morrow Board was an investigating body and the suggested board would be free to devote its attention entirely to forward-looking deliberations.

INTERNATIONAL ACHIEVEMENTS—The importance of preliminary moves being made in Washington and abroad in regard to international aviation agreements has been overlooked by some sections of the industry. Progress in airworthiness requirement agreements with Britain and undoubtedly with other nations should not be dismissed as another engineering problem. Behind it are many factors involved in post-war air commerce, which vitally affects the entire aircraft manufacturing industry. The Airworthiness Requirements Committee of the Aeronautical Chamber has been doing yeomen duty on this project and deserves the cooperation of the industry.

RECONVERSION—Only a few members of Congress showed up after the Senate to tackle reconversion legislation, but committees are

functioning on various phases of the program and it now appears there will be no overall reconversion bill but that several bills will come before Congress touching on related matters.

WOMEN WORKERS—Some members of Congress believe women's mission to stay in industry will be the biggest single headache in post-war reemployment problems. One more



SRD's, whose production was recently discontinued, came over Task Force 35

ber said he was convinced that at least 80 per cent of the women employed in industry want to keep their jobs after the war and that the heads of large plants will do nothing to replace women where they have been found to be as capable as men. Some acute national survey of this situation might avoid future problems, especially in the aircraft industry where the percentage of women is large. It's a suggestion for Mr. Dulles.

MATERIAL MESS—While complete consolidation of the Materiel and Air Service Commands probably will require months, a study of the two organizations makes it apparent that division such as engineering, production, and procurement of the Materiel Command and the maintenance and supply division of the Air Service Command may continue as separate sub-organizations within the broad set-up. However, personnel and training organizations and various administrative functions such as the Adjutant General's office, Judge Advocate, Finance, public relations and Prevent Marshal may be expected to merge, eliminating parallel functions and over-lap.

Where can they help you?



Coated Fiberglas* Fabrics

are solving many problems, today

Fiberglas Fabrics, due to their exceptional strength and dimensional stability, are giving new utility to coated cloths . . . as developed by a number of contractors.

Made from Fiberglas Fabrics—coated on one or both sides with mineral or synthetic rubber, vinyl compounds or other coating materials—the coated cloths are used to solve many surface problems. The strong, for instance, used in the fabric sections of plane fairings, roofs, kites, colored markers, sails, protective coverings such as battery covers, thermal insulation covers, oil resistant covers, flexible connections. Experimental uses include fuel storage bags and distillate tanks.

Design engineers are invited to write

While much remains to be learned about the potentials of coated Fiberglas cloths, contractors now have considerable data on their manufacture and application. Should you have a problem that may be solved by Fiberglas, write us for information, describing what characteristics you desire in the finished material.



Downs-Carsberg Fiberglas Corporation, 1982 Nicklaus Drive, Toledo 1, Ohio
In Canada, Fiberglas Canada, Ltd., Oshawa, Ontario.

FIBERGLAS . . . A BASIC MATERIAL

47-88 Rev. 1 - Ed. 67

OTHER AIRCRAFT USES OF FIBERGLAS

FIBERGLAS-REINFORCED PLASTICS

Analytical consulting engineer George F. Morris, of the firm of Morris-McCormick Associates, presents his findings on the use of fiber-glass-reinforced plastics in aircraft structures. He discusses the potential ability to obtain plastic dimensional stability under moisture changes. He also gives properties of this material and suggests how it can be used in a location of aircraft structures which appear ready to "Modernize." Write for your copy.

AIRCRAFT INSULATION

Fiberglas insulation, Type 50-49, is a high-quality, light weight form of insulation. It is available in rolls and measures only five inches wide by ten inches long, and weighs only one pound per square foot. It has excellent resistance to moisture and heat. It is recommended for use in aircraft insulation where it is used for interior heat and thermal insulating purposes.

AIRCRAFT BLANKETS

Another type of Fiberglas thermal insulation is the Fiberglas Thermal Insulation Blanket, Type 50-49, made of Fiberglas insulation. It is 36 inches by 36 inches of Fiberglas insulation, woven. Woven, Type H, treated with glass fibers. Weight is 1.15 lb. per cu. ft. It is recommended for use in aircraft insulation, and for insulation against heat extremes. Not endothermic shell, either high temperature or low temperatures.

TAPES

Another unique product—woven Fiberglas tape. This tape is extremely durable and retains dimensional stability, even after repeated exposure. Many other applications have been found for these durable, non-combustible tapes in aviation. Fiberglas tape is available in various widths and lengths. It is available in roll form, or cut to size, for immediate shipping needs.



Aviation News

VOLUME 2 • NUMBER 3

McGRAW-HILL PUBLISHING CO., INC.

August 14, 1946

First Army, Navy Surplus Planes May Go on Market Next Month

Bids on initial batch of personal-type aircraft will be opened under arrangements similar to those followed with DPC-owned planes.

By WILLIAM G. KEY

Another month will see the first Army and Navy surplus planes moving into the civilian market to supplement the 5,490 DPC-owned bombers from the CAA-WTS program now being sold under the surplus program.

Process of contracting for storage and sales centers for the personal-type surplus planes from the Army and Navy is virtually completed. Types suitable for sale are being turned to the sales areas. First bids will be opened under the arrangements followed with DPC-owned planes.

About 3,800 craft purchased by DPC for lease to operators of War Emergency Flying Schools already have been sold to private purchasers, with usually several bidders for each plane sold.

Routes—Surplus aircraft disposal is settling down to routine, as shown in the accompanying diagram, but organization will be kept feasible to meet problems which cannot now be foreseen.

Overall policy and planning is vested in the Aviation Division of the Surplus War Property Administration, which is headed by Lt. Col. William B. Hartling. All domestic surplus plane sales have been assigned to the Reconstruction Finance Corp., which in turn has designated the Del Norte Plant Corp. to handle the details.

Since War Training Service of Civil Aviation Administration supplied a great quantity of aircraft, and because it was closest associated with Del Norte Plant Corp. in the WTS program and its financing, this organization has been selected to the surplus disposal program. So far, the DPC-owned planes—which technically are not surplus but are being dis-

posed of under provisions of earlier legislation—have been sold through existing mechanisms of the CAA, planes being stored under contract by the WTS operators. DPC has supplied supervision. CAA has furnished technical assistance as a valuable basis.

Actualities, other than for technical purposes, the two organizations have been working in close proximity. Sales, other than in the transport category, are made directly at the sales centers on a bid basis, handled by CAA-WTS organization.

Sales will continue on a bid basis until new surplus disposal legislation has been passed by Congress, after which it is expected that there will be some discretion permitted.

Advice to Surplus Plane Buyers

Facts that prospective buyers should understand clearly before submitting bids for surplus planes have been outlined by government authorities who fear widespread misunderstanding as sales of surplus-type planes move toward heavy volume.

Here are some of the points to watch:

Inspection of Planes—Most complaints received concerning planes for sale have come from those who have not inspected the planes before offering a bid. Government authorities emphasize that the planes are used, that they are "in all manner of condition." That usage may be readily determined by either a visual inspection or by a detailed certificate of fitness. The instructions for bids clearly point this out, but many have not heeded the warning.

Coloring Prices—Coloring price of each surplus plane is worked out on the basis of the cost of the plane at all points of physical condition or the probable cost necessary to return the plane to airworthiness. Age as of date of sale is depreciated on a basis of eight percent a year. Optional equipment, such as delivery charges and extra equipment installed after original delivery, is added, with depreciation figured on an

age basis. There are deductions for any major standard engine and for hours of normal engine. Since these last major wrenches, completed on 40 cents an hour, are not subject to deduction, the cost of major engine delivery is taken into consideration.

Airworthiness—When planes have been sold and are deemed capable of flying, they are given a temporary airworthiness certificate to be obtained from the CAA representative at the field, which permits the buyer to fly the plane to his home base. There, all maintenance, structural and electrical work must be done to obtain a permanent airworthiness certificate. The instructions for bids clearly point this out, but many have not heeded the warning.

Type Designations—While many of the surplus planes that will soon be on the market will be identified with civilian types, their designation will be different and some insurance charges will have been made. Every effort will be made to indicate comparable types, but caution should be exercised in this regard, since the planes should be personally inspected by the buyer or a qualified representative.

Sales Procedure—The report of the Surplus Aircraft Advisory Subcommittee recommends that the bid basis be followed for models that do not require sales efforts. It urges that a fixed price system combined with quantity discounts and commissions on sales of consigned planes would stimulate distribution where indicated for sales effort is advisable.

Planes in the transport category are handled on a different basis, since there are not sufficient numbers to meet the demand. Such applications must be made to DPC, which will process and channel them to the Aviation Division of the SWPA, where available transports will be allocated.

Foreign Sales—Foreign sales are to be handled through the Foreign Economic Administration. This organization is not yet completed, although there are some negotiations for sales in other countries, particularly South America. Transports will follow the same procedure here as in the case of domestic applications, being presented to SWPA's Aviation Division.

Bulk of domestic sales will be handled at the 32 sales centers set up by the DPC (AVIATION NEWS, Aug. 5, Page 16). Five others are in process of contract negotiations and it is possible that three or four others will be added. There are 13 storage centers in addition to two storage-sales centers, and it is possible that the balance of approximately 40 fields acquired by the DPC for use in the continental United States and the Navy's training areas will be used for storage of aircraft with no immediate sales possibilities as soon as the fields are released by the services. Probably companies now operating these fields will be given contracts to manage the storage centers.

Spare Parts—Spares also are being assembled in storage centers. There will be no shortage of spare parts for most types of planes. Engines, propellers, and components of all kinds are being released with planes by the services and will be stored as a reserve supply on which owners of the planes can draw. Methods of disposal of the spares have not yet been worked out.

Latin American Market Surveyed

Private flying clubs in 16 Latin American countries, which with the United States wing comprise the Inter-American Air Racer, are being surveyed to determine their needs for surplus trainer planes. Methods of disposal of the spares have not yet been worked out.

Radio equipment for aircraft released by the services will require some modification to civil frequencies before they can be used in civilian craft, but no great difficulty is expected.

Mostly Two-Place Planes—Most

of these planes are two-seated with 50 to 90 h.p. engines. Models are Piper, Taylorcraft, Aerocar, Portafield, Interavia, and Lancome. Others are 100 to 330 h.p. by Fairchild, Fleet, Cessna, Currie, Howard, Stinson, Waco, Ryan, Mooney, and others.

In the EEC passed out to the Latin American wings that the acquisition of these airplanes by the buyers in the other American republics is difficult, since these buyers are unable to inspect the condition of the planes. As a solution to this problem, the United States wing is trying to obtain the help of the manufacturers in order that the manufacturers may inspect and certify as to the flying condition of the planes of their own manufacture, and, if possible, so that they may assume the responsibility for their export.

Morris M. Marmer, aviation director for the Coordinator of Inter-American Affairs, is aiding the U. S. wing in negotiations to make surplus planes available to Latin American wing and aero-clubs.

Offering of Planes—Under the present financial setup, the DPC-owned planes brought from private owners are offered first to the original owner at ceiling price. If he declines, the planes are offered next to the present user—the training school operator—also at ceiling price. If not purchased, the planes then are advertised in the regional offices of the CAA, in which a staff of WTB personnel is situated.

When the Army-Navy surplus is placed on the market, planes that are not likely to be useful will be turned over to the WTB Training Service of CAA, last week had begun to function in the Reconstruction Finance Corp. building, 311 Varnum Avenue, N. W., Washington, D. C.

Chief of the division is James A. Garfield, his two chief assistants are Thomas E. Wadden, who will have general supervision of factual data, location, condition and price of planes to be sold, and E. L. Taylor, who will direct operations and sales. Other top assistants are E. E. Lottrop, until recently director of research and statistics for the Aeronautical Chamber of Commerce, who will handle component parts, and George A. Elman, who will be in charge of plane evaluation.

A questionnaire has been sent out by Alfredo de la Riva, vice-president of the Escadrille, to ascertain the needs of wing and aero clubs throughout the Americas for planes and spare parts.

Mostly Two-Place Planes—Most

of these planes are two-seated with 50 to 90 h.p. engines. Models are Piper, Taylorcraft, Aerocar, Portafield, Interavia, and Lancome. Others are 100 to 330 h.p. by Fairchild, Fleet, Cessna, Currie, Howard, Stinson, Waco, Ryan, Mooney, and others.

In the EEC passed out to the Latin American wings that the acquisition of these airplanes by the buyers in the other American republics is difficult, since these buyers are unable to inspect the condition of the planes. As a solution to this problem, the United States wing is trying to obtain the help of the manufacturers in order that the manufacturers may inspect and certify as to the flying condition of the planes of their own manufacture, and, if possible, so that they may assume the responsibility for their export.

Morris M. Marmer, aviation director for the Coordinator of Inter-American Affairs, is aiding the U. S. wing in negotiations to make surplus planes available to Latin American wing and aero-clubs.

Offering of Planes—Under the present financial setup, the DPC-owned planes brought from private owners are offered first to the original owner at ceiling price. If he declines, the planes are offered next to the present user—the training school operator—also at ceiling price. If not purchased, the planes then are advertised in the regional offices of the CAA, in which a staff of WTB personnel is situated.

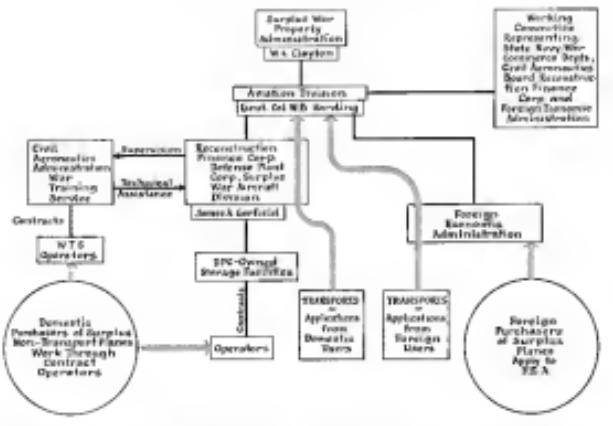
When the Army-Navy surplus is placed on the market, planes that are not likely to be useful will be turned over to the WTB Training Service of CAA, last week had begun to function in the Reconstruction Finance Corp. building, 311 Varnum Avenue, N. W., Washington, D. C.

Chief of the division is James A. Garfield, his two chief assistants are Thomas E. Wadden, who will have general supervision of factual data, location, condition and price of planes to be sold, and E. L. Taylor, who will direct operations and sales. Other top assistants are E. E. Lottrop, until recently director of research and statistics for the Aeronautical Chamber of Commerce, who will handle component parts, and George A. Elman, who will be in charge of plane evaluation.

Mostly Two-Place Planes—Most

Mostly Two-Place Planes—Most

SURPLUS AIRCRAFT DISPOSAL SYSTEM



How Surplus Planes Will Be Sold. This chart shows the organization being set up to handle sales of surplus aircraft. The straight line mark the line of organization. The flowing, wavy lines show participation of various agencies in purchases, transports

and under allocation and channel through R.F.C. for domestic users, and FEA for foreign users, to Latin Col. William B. Marling, director of the Aviation Division of the Surplus War Property Administration.

Surplus Airplanes Mostly Trainers

While no actual breakdown is available, bulk of surplus planes now being turned over to Army and Navy's Interceptor and Pursuit squadrons are in the trainer category, although some old combat planes and gliders will be included.

Primary, basic and advanced trainers of various types will be offered for sale to civilians, some requiring modification.

Some Combat Planes—The few combat planes will not be offered on the civilian market. Other craft have been resurrected and probably will have to be reconditioned by SWPA before they fall apart. Two are Savages-McCormick transports now owned by this country which Italian Airlines in Brazil were requisitioned; a few are Douglas Dakotas. Others have been wrapped around telephone poles

and fence posts by fast-stopping pilots.

Some air good planes that have seen their measure of service and have been repaired, battle-worn, or heavy buster of this group are now being analyzed to determine the economic value of salvaging materials from planes in the combat class. There also may be some of the original versions of the B-16 bombers, probably destined for classroom use.

Training Gliders—Another large block being turned over consists of training gliders, few if any of which can be sold for aviation use. Efforts are being made to devise other channels of sale for non-aircraft uses.

A few light aircraft that were used in training will be placed on sale and it is expected that there will be little trouble in disposing of them. They will be handled through normal channels and information will be available through regional CAA offices.

Schools Studying Fixed Base Plans

Former Army contract appears to move at Paris Air College, East St. Louis, Ill., this week.

Representatives of closed Army contract flying schools will meet at Paris Air College, East St. Louis, Ill., Aug. 16 and 18 to plan future fixed base and feeder line operations and flight training. Six more schools closed Aug. 4, bringing the total closed to 12, leaving 40 coded schools and one military liaison school still in service.

The Oliver Parks organization is considered to have more experience and information on airport development, on aircraft sales and on prospects for fixed base and feeder line service than most other similar organizations. Mr. Parks is said to be willing to help the non-scheduled aviation industry as much as he can.

Fuel Problem—It is believed the government will permit use of gasoline by training schools for legitimate maintenance and accumulation of flying skills. Airplanes for training purposes are available, but not enough of the right type for charter and tax work can be had. There are potentially some at this time for feeder line work, but doubtless these will be available at the time new routes are authorized. Uncertainty as to the government's policy on feeder line expansion is a problem that neither route can be done about now.

The East St. Louis meeting is being held by the Eastern Information Council of Aeronautical

Training Society for all AT&T closed schools. The society has three information councils—cooperative groups patterned somewhat after the aircraft production teams in the southwest, central and West Coast regions.

School Closure—Six schools closed in August by order of the Army Air Forces Southern Aviation School, Carden, S. C. Helene Aero Tech, Helene, Ark.; Beaufort Flying Service, Coosa, Tex.; Spartan School of Aeronautics, Tulsa, Okla.; Hunter Flying Service, Vernon, Tex., and Morton Air Academy, Blythe, Calif., form.

Gen H. H. Arnold, chief of Army Air Forces, placed all primary training for AAC in the hands of selected civilian schools in the summer of 1939. Late last year, Burton K. Yeager, chief of training and development of pilots had reached 110,000 per year. He said there was only one final accident for every 43,675 hours of primary flight, and added that both a quantity and quality job had been done.

New Marine Office

Establishment of the office of Assistant Commandant for Air for the U.S. Marine Corps is proposed in a bill introduced by Rep. Maxine, ranking Republican member of the House Committee on Naval Affairs. The bill prescribes that before the Assistant Commandant and the Assistant Commandant for Air shall be his offices not below the rank of colonel and that each have the rank pay and allowances of a major general while holding office.

Hammond to Close Plant Next Month

Hammond Aircraft Co., largest aircraft company in the San Francisco Bay area, will stop operations Sept. 1 under terms of the company's award contract for manufacture of components for the Douglas A-30 is completed.

Hammond, established six years ago, is the first major war plant in the area to close as a result of aircraft schedule readjustments and the shutdown will affect about 1,000 workers, about 90 percent of whom are women and most of whom will be referred to China Aircraft Corp., new manufacturing partner for the Douglas A-30.

Aeronautics—A joint statement by Frank P. Lovett, president and officials of Precision Machine Company and American Aircraft Lodge 1227, announced suspension of operations. Hammond has discontinued no peace-time plants.

Officials of the Air Transport Division of Marine Navigation Co. disclosed that they may use the property now leased to Hammond Aircraft for an overhaul base if their application for trans-Pacific service is granted. The property and buildings of Hammond Plant No. 1 are owned by Nitro and Hydro Mills Field. Plant Two is in San Francisco.

N.C. Air Week Off

Because of the polo epidemic, the first annual North Carolina Aviation Week, scheduled for Aug. 14-20 at Charlotte, has been cancelled. One of the main events was to have been a meeting of 1,200 CAP cadets.



CARRIER BRINGS PLANES TO GUADALCANAL:

A Navy baby carrier, one of the newest types, is shown here arriving at Guadalcanal carrying a load of Lockheed P-38 Lightning fighter planes for replacement of worn out craft throughout the area.

U.S. Compiles Airworthiness Data For Talks on World Agreement

Recommendations of industry on post-war problem sought for presentation to CAB and aviation division of State Dept.

By SCOTT HERSHY

There are increasing signs that an international aviation agreement covering airworthiness requirements will be set for early, although the trend of thinking is that the recent decision to appear civil air attacks at our own expense will be referred to China Aircraft Corp., new manufacturing partner for the Douglas A-30.

Competition Required—Many factors are involved including competition from foreign countries whose labor costs are not so high as our own, a situation that might react unfavorably in the domestic industry. Some industry people who fear no agreement, contend that we can build better airplanes and sell them regardless of costs. Others point out that a strong agreement would give our builders a psychological edge in that purchasers would feel that the government was behind our aviation products.

The Airworthiness Requests

Committee of the Aerospace Chamber has set Aug. 19 as the deadline for receipt of opinions from the Chamber's member companies on airworthiness requirements and suggestions on international agreements. These opinions will be compiled, analyzed and summarized and submitted to CAB and the State Department.

More Time Asked—It is understood that some companies have asked for more time to formalize their views, but government officials are pressing for immediate action, pointing a desire to move on the whole question of international aviation immediately.

Problems of airworthiness requirements are receiving increasing attention in the industry generally, although reports from abroad indicate the British industry is ahead of our own in this connection. It is no secret that views on the subject are widely divergent, ranging from the opinion of some that there should be no agreement at all up to a complex international set-up.

Questionnaire—Importance of the subject was pointed up at recent meetings held availa-



FLYING FORTRESS NINE YEARS OLD:

Nine years of peace and war have brought this change to Boeing's famous Flying Fortress bomber. Top photo shows the original Boeing 259 which was first flown on July 25, 1935. Below is the current B-17G.



AVIATION NEWS • August 14, 1944

seously on the East and West Coasts of the Chamber's Airworthiness Requirements Committee. A series of six questions regarding it have been put to the industry and officials are hopeful that from the answers they can develop a definite policy which will accurately reflect the industry's thinking.

The questions proposed, which give an indication of Washington thinking in the matter are:

- Should airworthiness in airworthiness standards be considered an objective of such committee as to be necessarily sought, with the intent to make appropriate recommendations if necessary to attain it?

If an attempt at complete international agreement is made, to what extent would your company be willing to extend its interests to the United States members on an international airworthiness board, knowing that the Board's decisions would be final and binding?

If there isn't an international uniformity in airworthiness, what conditions, if any, should govern the admission of foreign aircraft into the United States for sale as private purchasers? Is what respect should the answer to No. 3 be changed, if at all, where the sales is to be for use on the airlines of the purchasing country or other commercial employment?

If agreement is to go ahead, a decision must be possible without the formality of having agreements binding, due to the concern of some, what specific steps in these requirements must do you feel should receive first consideration for such international agreement?

What regulatory agreements, if any, should be placed on the equipment of foreign airlines by the countries into or through whose territory they fly? E. G., should the United States establish regulatory standards to govern the equipment or operation of a foreign airline entering our ports?

Names Omitted

In a listing of the members of the board of directors of the American Association of Airport Executives in a story on the association's recent convention, the names of Dudley Strick, manager of the Lockheed Terminal, Burbank, Calif., and Don Swanson, Refidex, Minn., were inadvertently omitted.



B-29 SPECIAL:

Here are the flying officers of the Gen. H. R. Arnold special Boeing B-29 Superfortress, named for the AAF's commanding general, who photographed the bomber as it was progressing through the Bering plane at Wichita. Left to right: Lt. Col. John J. Sheehan, Jr., captain; Capt. Jack Schermer, bombardier; Capt. Bert Aller, navigator; Lt. Arnold V. Nipper, flight engineer and Lt. Col. William P. Artese, special radio operator.

Fairchild Volume Up Over 100 Percent

Total \$102,450,364 in 1943, compared with \$47,884,224 in 1942.

Total dollar volume of business done by Fairchild Engine and Airplane Corp last year was reported by J. Carlton Ward, Jr., president, at \$102,450,364, compared with \$47,884,224 for 1942. An increase of 13% percent over 1942 and 64% percent over 1941.

No. 1 engine for 1943 was \$1,627,500, a Federal裁款 of \$16,510,885 and accounted to 1.8 percent of sales. This was equivalent to \$1.15 per engine share against \$0.90 a share for 1942.

Reorganization.—The figures are after reorganization with the price adjustment section of the AAF Eastern Procurement District, which resulted in an agreement signed by the corporation Aug. 1, subject to approval by Washington. Under this agreement, Fairchild will pay to the government \$33,788 and waive certain unpaid claims aggregating \$416,304 and claims aggregating \$416,304 and

AVIATION CALENDAR

- Sat., Sept. 10—Annual Meeting, Miami, Fla.
- Sat., Oct. 1—Annual Aircraft Exposition, CAA, New York City.
- Sat., Oct. 15—Annual Meeting, National State Insurance Week, Cleveland.
- Sat., Oct. 22—Annual Meeting, Regional Conference, Aircraft Manufacturers Council, CAA, Miami, Fla.
- Sat., Oct. 29—Annual Meeting, Louisville, Ky.
- Sund., Oct. 30—Annual Meeting, Peoria, Ill.
- Sept. 1—1944—American Institute of Electrical Engineers Annual Technical Meeting, Hotel New Yorker, New York.
- Sept. 2—Transamerica—Western Regional Conference, San Francisco, Calif.
- Sept. 3—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 4—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 5—Annual Meeting, American Appraisers' Association, Hotel St. Louis, St. Louis.
- Sept. 6—National Club of Economic Analysts—Annual Meeting, Hotel St. Louis, St. Louis.
- Sept. 7—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 8—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 9—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 10—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 11—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 12—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 13—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 14—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 15—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 16—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 17—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 18—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 19—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 20—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 21—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 22—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 23—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 24—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 25—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 26—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 27—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 28—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 29—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 30—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Sept. 31—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 1—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 2—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 3—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 4—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 5—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 6—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 7—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 8—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 9—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 10—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 11—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 12—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 13—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 14—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 15—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 16—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 17—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 18—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 19—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 20—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 21—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 22—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 23—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 24—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 25—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 26—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 27—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 28—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 29—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 30—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Oct. 31—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 1—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 2—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 3—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 4—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 5—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 6—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 7—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 8—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 9—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 10—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 11—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 12—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 13—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 14—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 15—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 16—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 17—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 18—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 19—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 20—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 21—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 22—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 23—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 24—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 25—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 26—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 27—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 28—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 29—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Nov. 30—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 1—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 2—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 3—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 4—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 5—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 6—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 7—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 8—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 9—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 10—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 11—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 12—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 13—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 14—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 15—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 16—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 17—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 18—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 19—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 20—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 21—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 22—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 23—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 24—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 25—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 26—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 27—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 28—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 29—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 30—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.
- Dec. 31—Annual Meeting, American Society of Appraisers, Hotel St. Louis, St. Louis.

Unemployment Pay Fight Slows Senate Reconversion Legislation

Conservative George Plan leaves job of determining standard of idle warplane workers to states; Kilgore-Murray Bill sponsored by labor, provides generous payments and allowances for vocational training.

Although the Senate last week stepped up sharply the tempo of its treatment of reconversion and demobilization legislation, a stiff fight over unemployment pay remains to delay final action for perhaps several more weeks.

There was no doubt, however, that recent military successes in Europe and Asia convinced the deliberative and conservative Senate and House that immediate demobilization legislation was imperative. The coalition of conservative Democratic and Republican senators, which formed their lines quickly in an effort to defeat the Kilgore-Murray Bill, was determined to push for the George Bill despite the fact that final enactment of a measure may be held up.

Two Plans Weighed.—It was difficult to predict which of the two unemployment compensation plans would eventually emerge from the current Senate committee. The George Plan, conservative in character, would leave to the individual states the determination of minimum standards for warplane workers and would guarantee solvency of state unemployment compensation funds. The Kilgore-Murray Bill, sponsored by organized labor, would provide liberal unemployment payments as well as generous allowances to veterans for vocational training.

The unemployment compensation issue was virtually the only point on which there was determined opposition. Otherwise the demobilization and reconstruction legislation seemed scheduled for relatively smooth sailing.

House Ready to Act.—Meanwhile, on the House side, plans were being drafted for prompt handling of demobilization bills. Indicating the speed with which the House planned to move was the statement made this week by Speaker Rayburn, who called on the entire House membership to be ready to return to Washington by Aug. 14 to consider this legislation.

Current production volume was nothing to be alarmed about.

These are the facts which WPA recognized but which they were hesitant to release in their desire to avoid a show-down fight with the Army:

Of the entire war production program, which amounts to about \$20,400,000,000 (but which excludes armament, naval and maritime construction), only about 15 percent represented a problem area.

From November, 1943, to June, 1944, the Army supply program, which was increased to about \$20,400,000,000 (but which excludes armament, naval and maritime construction), only about 15 percent represented a problem area.

But even after the two WPA officials publicly asked to be relieved from the agency because of the disagreement over production figures, the Army continued to deny there was any difference of opinion. Maj. Gen. Lucius D. Clay denied the report in question was a general inventory which the Army had been reluctant to release because of tight needs for specific weapons.

Foreign Trade Body To Study Aviation

Post-war transportation, including aviation and merchant shipping, will be considered at the 31st National Foreign Trade Convention, to be held under the auspices of the National Foreign Trade



LIGHTNING'S JAM CARRIER DECK:

Deck crew of carrier plane have clearly planes are stored on deck. Note how they are placed alternately, one facing one way, the one next facing the other to insure maximum of space being used on the carrier's deck.

PRIVATE FLYING

Aeronca, Lightplane Pioneer, Studying 4 Post-War Models

Company hopes to produce three 2-place craft and one 4-passenger family type, with other designs under consideration.

By ALEXANDER McSHEREY

Aeronca Aircraft Corp., the nation's oldest lightplane maker, which built a powered glider with a 35 hp. motor in 1928, and one of the "Big Three" pre-war lightplane builders, now has restrictions on private plane construction. It obtained government contracts for military aircraft, enlarged its plant, and has gained much war-production know-how from building sub-assemblies and completed aircraft bigger and heavier than anything the company had produced before.

Aeronca is still busy in the war effort, building elevators, radiators and torque tubes for the Curtiss Commando C-45-A, elevators for the Boeing B-17, and struts for the Waco-designed CG-4A glider, as well as component parts for the Curtiss Helldiver.

Conversion Plans—But Aeronca wants to be ready for conversion to non-military production when V-day comes. Preparations thus far fall in two categories, design and production plans and marketing plans.

Here is what Aeronca currently will announce that it will produce in the immediate post-war period, according to its own design up to date:

► An inexpensive two-place tandem, with flying characteristics suitable mainly for learning to fly. It has been improved and refined over pre-war and military models



John W. Friendlander, President
Carl Friendlander, Vice-President

providing all-round better performance, improved control, greater comfort.

► A two-place side-by-side plane whose parts will be interchangeable with the inexpensive tandem, except for a portion of the fuselage, making for greater production ease and reduction of spares.

► A sleek two-place low-wing all-metal speedster with retractable landing gear and 60 hp. engine.

► A four-place "family plane" with tricycle gear, but no other description released.

Ed Burn, director of engineering and research, points out that every plane is a newly engineered design, not a revision of pre-war models, and that the designs take advantage of new production techniques, for cost reductions and improvement of the products.

Among design refinements of Model 3, the tandem, which already has flown, Burn cites the following:

Screamed fuselage, weight reduced, larger and more comfortable interior, longer and wider door, better control arrangement, and a new seat position, primarily through a new one-piece plastic headrest and partly through occupant seat position in place plane occupies better visibility over nose and over side; standard cowlings supported independent of engine permitting a "flashing" power installation, improvement of landing gear.

In 1931, unemployed, and with meager finances, he set up his own flying service with a flying club at New Jersey. His business expanded and he became a distributor

ing gear fittings, overall design for accessibility and ease of maintenance.

A prototype of the low-wing speedster, Model 9, primarily for the experienced flyer, served at re-training army pilots, also has flown. While the prototype is equipped with a plywood fuselage, the production airplane will have an all-metal fuselage. The two main landing wheels of this plane are retracted mechanically by hand-crank. Wings and ailerons are designed so that the plane can be flown without using either engine, says Burn, since the design eliminates the usual adverse yawing.

Speedster—The speedster has over ten pounds per square foot wing loading as compared with about seven pounds for the other models. As a result of the heavier loading and the wide tread landing gear, the craft handles unusually well in high winds, both in the air and on the ground. Model 9 will have a cruising speed of around 125 mph., a top speed of around 135, with range about 500 miles at cruising.

Director Bennett, and other Aeronca engineers, have developed a comprehensive marketing program for airport operators which they believe will be a business-like setup for small airports. Details have not been announced but it is expected to include a complete plan for sales, service and maintenance for the typical small field, including details down to sample bookkeeping.

Sales Force—While no Aeronca distributors or dealers actually have been signed for post-war activity, a reliable sales organization is planned, including representatives from all parts of the country. Bennett has drawn largely on his own experience in setting up the post-war marketing program.

In 1931, unemployed, and with meager finances, he set up his own flying service with a flying club at New Jersey. His business expanded and he became a distributor

of gear fittings, overall design for accessibility and ease of maintenance.



Two Military Models Produced by Aeronca: Top photo shows the L-3, Army Glider plane, and below, the TG-3, AAF training glider. Neither is still in production.



burer, spending much of his time showing other young men how to start similar flying service organizations. He is credited with establishment of many small airports, flying services and clubs, many of which served as additional outlets for planes. His introduction of sound business practices into aviation sales at a period when many dealers were still using barter-trading methods, won him recognition as one of the foremost personal plane sales officials.

Moved After Flood—Initially set up at Cranford, Aeronca moved to Middletown after the 1937 flood, and began operating its new plant in 1940. The Pedersen brothers, John and Carl, have been head men of the company since its beginning. John recently advanced to vice-president, while brother Carl, who had occupied the presidency, stepped down to a vice-presidency.

Other key men in the organization include Elmer L. Sutherland, executive vice-president, who has a wide business experience, and Albert Hoffman, secretary-treasurer. Heading the engineering organization under Burn are Chief Engineers Raymond Hermon and Leo Wolfe, research department chief, who have had important roles in the development program.

Nine of the post-war Aeronca planes discussed here will be equipped with two-control arrangements similar to those used by the Fokker and the Stinson. Burn says his company is not en-

tirely satisfied with present two-control systems, but is continuing study on them and will use two-control on models now under design.

The company is interested in some form of controllable pitch propeller, particularly for its high performance aircraft, but will stick with fixed pitch props to keep costs down. Experiments with spring-type landing gear lead to a decision to continue with the present slow-fold landing gear, conventional rather than tricycle because of easier maintenance.

Post-War Airparks Planned in Missouri

Missouri now is engaged in the development of a statewide plan for aviation which calls for hundreds of landing fields, air markings and flying regulations. The program being evolved at Jefferson City by the Missouri Resources and Development Commission is headed by D. Howard Deane of St. Louis.

The Missouri plan is in line with the proposed Federal program in which the Civil Aeromotors Administration plans to ask Congress to appropriate a billion dollars for development of air parks throughout the United States.

Recreation Areas—The Commission recommends landing strips 2,000 feet in length—at least one paved runway, and from 40 to 160 acres of land for each of 300,000 or less. Additional areas should be provided for public recreation, including tennis courts, golf courses, picnic grounds, lakes and swimming pools.

Under the state air-marketing program, names of towns would be printed in the places of greatest prominence. Markers would direct flyers to the nearest airparks.

Canadian Outlay

Canadian government expenditures to provide airfields and related facilities totalled about \$154,000,000, the House of Commons at Ottawa was told by Minister and Supply Minister C. D. Howe. Of this amount \$18,200,000 was spent before the war, and \$14,100,000 since the start of the war.

Pesonate expenditures included \$3,700,000 to aid municipalities. War-time expenditures involved improvement of 64 airfields and the construction of 147 new airfields.

Southeastern Opens Three More Bases

Air service company buys U. of Georgia equipment and leases airport at Athens, Ga.

Southeastern Air Service, Inc., which has trained some 16,000 Army Aviation Cadets in two AAC primary training schools, has put its Major and Associate Base plan for civilian flying service into operation with the opening of a major base at the Athens, Ga., airport and two associate bases in South Carolina.

The company purchased equipment of the University of Georgia School of Aviation and leased the Athens airport (Ben Eppa Field) for a ten-year period from the Clarke County Board of Commissioners. The University's school completed a WTS contract in July and is being liquidated. It trained naval probations.

Equipment.—The Athens airport and school equipment includes an aircraft repair hangar, an engine overhaul shop, a paint and dope building, a two-unit engine run-in house, two large storage hangars and an administration building. The landing field has two 4,300-foot asphalt runways, with spruce and taxi strips. There is a CAA weather station.

This airport is set up as the company's major base for northern Georgia and the western Carolinas. Two associate bases have been put in operation at Lancaster and Rock Hill.



VACATION COURSES:

Civil students from Mandeville College, Chicago, are taking flight training on their vacation at DeLoach Lake in one of E. Merrill Anderson's two Piper Cub flight planes. Many solo or two weeks duty lessons, says Anderson, junior AAC civilian flight instructor.



HIGH SCHOOL STUDENTS LEARN TO FLY:

Civil students at Los Angeles Polytechnic High School are shown in novel stationary J-17 trainers in which they learn primary flight experience and coordination of control without leaving the ground. They are ready for advanced courses after dabbling this one.

Ball in South Carolina, Sidney E. Mataeffly of Lancaster is the proprietor. The associate bases are at Caribbean airports in the Virgin Islands and Roatan, Honduras. Under an agreement with Southeastern, they use the company's airplanes and sales contracts and in turn provide maintenance, service and flying instruction in accordance with standards set by the company.

Expansion Planned

Cody Laird, president of Southeastern, which has headquarters in Atlanta, said the company would expand the associate base network in the operating radius of the Athens major base as quickly as feasible. The company is making arrangements for similar base setups throughout the southeastern states.

Southeastern, a member of the Association of Training Societies, plans to open an approved flight school at Athens in conjunction with the University of Georgia. The company's Army primary pilot school at Jackson, Tenn., completed its cadet quota in June, contract for continuation of its other big AAC school at Benettsville, S. C., has just been renewed by the Army.

CAP to Expand

Two new promotional brochures, one designed to supply information on organization of new Civil Air Patrol units and the other to attract air-minded youth to the CAP Cadet program, are being distributed by the CAP.

Expansion.—The CAP Cadet program is expected to expand with the opening of schools in the fall. Another steady flow of participants probably is the Army Air Forces Organization of units in cities now without CAP elements also is being sought to widen the scope of the Cadet program.

Local Firms Urged To Finance Planes

Aero Insurance Underwriters, in a statement on insurance of financed aircraft, point out that national financial institutions almost monopolized the financing and insuring of automobiles but that this should not happen in the case of aircraft. Banks, local finance companies and insurance agents are urged to the opportunity which exists for participating in this business.

Local Banks Interested.—Many local banks, they report, are not financing aircraft sales and many more are interested and need information on the subject. The firm, with offices at 111 John St., New York, has prepared a folder on the subject containing most of the essential data to enable any bank engaged in consumer goods financing to understand how its facilities can be extended to aircraft.

Local agents, in the opinion of this firm, can play an important part in bringing together dealers and distributors of aircraft and banks which would like to expand installment financing activities.





The epic of flight, of man's resolve will win the air, is still in the making.

Yet when the story is entered in the chronicles of the future,

the Constellation will signal the end of one chapter and the beginning of another.

It will be recorded then, the routine transcontinental flight of less than seven hours,
the precious cargoes swift to the war fronts, the superior speed and ease of climb and load capacity.

All these will be revealed and it will be evident that in the year 1944
the Constellation brought to full expression the combined triumphs of the past,
establishing new standards in air transportation and setting a true course

for the designers and builders of the future

THIS IS LOCKHEED LEADERSHIP

The Constellation

Highest speed of any transport—cruising at more than 300 m.p.h.

Longest range of any transport—nonstop coast to coast

Biggest load-carrying capacity of any transport—64 passengers, crew and cargo

Greatest rate of climb of any transport—run-above mile a minute on four engines
AND these performance factors make the Constellation the safest of any transport.

THE Constellation

WHAT IT WILL PROVIDE THE AIRLINES AND
AIR TRAVELERS OF THE WORLD

THE CONSTELLATION will bring greater economy to air travel, because its high speed, big payload and low fuel consumption will mean lower operating costs for airlines.

It will provide the convenience of great versatility so urban operations, because of unprepared performance and economy on short and medium distance as well as long range flights make it suitable for different types of airline schedules. It can take off or land at any standard airport.

Of course the cabin accommodations will be luxurious. Since the cabin is pressurized and has sufficient heating or cooling, passengers can ride in comfort in the Constellation's smooth flying altitude of 35,000 feet.

There are more safety features on the Constellation than on any other plane we know about, but beyond and more important than these — an safety lies in its performance... its ability to fly over, or around, or away from, adverse weather.

LOCKHEED

FOR NEW STANDARDS IN AIR TRANSPORTATION
LOOK TO *Lockheed* FOR LEADERSHIP

Lockheed Aircraft Corporation, Burbank, California

THE AIR WAR

COMMENTARY

Rocket, Robot, Radio Developments Bring Revisions in Air Tactics

Rocket-powered planes capable of 500 mph expected to set pace over battlefields of Europe shortly; reports of piloted plane carrying eight- or ten-ton bomb gives Britain new worries; radar progress continues.

Although the rocket was used as a military weapon some seven centuries ago by the Chinese against the Tartars, and from time to time ever since, it is only during the past couple of years that it has come to take its place as an outstanding weapon in its own right. Rocket-propelled armament on aircraft was used by the British in World War I for close range attacks on observation balloons and Zeppelins.

During the next 25 years the British continued experiments in this field, developing two types of head, the solid 15-pound shot and the explosive delayed action 60-pound shell.

However, the Russians seem to have been the first to use aircraft rocket projectiles fitted with explosive charges in the nose, in the winter of 1941-42 on the Sturmovik assault plane IL-2, and later on the IL-3 and 4, and the MiG-3, YAK-1 and LaGG-3 fighters, they were used almost exclusively against ground objectives.

FAM-60-NR (Napalm) early last year the Lockheed aircraft research team fired PV-188's, ME-109's and 110's against the increasingly effective daylight masses of the British Air Force. For a time they made these Russians more costly, but not one was turned back, and in our long-range escort strength.

Army Air Force RP fighters in-



ROCKET GUNS USED IN CONQUEST OF SAIPAN

The day after American troops landed on Saipan, a rocket-equipped Thunderbolt appeared, strafing and bombing enemy gun emplacements. The rockets proved a great help in clearing out the Japs en-



trenched in caves and in destroying ground objectives. More curious shots show one of our rockets being fired from rock under wing. Other pictures show soldier loading under-wing rocket tubes.

Here's What You Get in Hartwell Stainless Steel Swaged Terminals:



1 SHANK TENSILE STRENGTH WELL IN EXCESS OF BREAKING STRENGTH REQUIREMENTS; AND DISTORTION IN FULL TEST FAR BELOW SPECIFICATION ALLOWANCE. This is assured by a new manufacturing technique developed by Hartwell.



2 IMPROVED SWAGING QUALITIES. The process by which the tensile strength of the shank is increased in no way impairs the swageability of the terminal.



3 CONCENTRICITY KEPT WELL WITHIN BLUEPRINT TOLERANCES. Uniform wall thickness is maintained for the full length of swaging end. This assures perfect swaging; eliminates the danger of cable or terminal failure due to uneven stresses.



4 CAREFULLY MAINTAINED THREAD TOLERANCES. Automatic threading equipment, plus 100% inspection, assures a perfect thread so necessary on these highly stressed parts.



5 COMPLETE LINE. Hartwell terminals are available in the following series: AN667, 3-6, inclusive; AN668, 3-6, inclusive; AN669, 3-6, inclusive, shorts and longs, rights and lefts. All terminals are passivated by the hot process; AN/TdA specification.



Single source for 77P aircraft aircraft production parts and tools

HARTWELL
AVIATION SUPPLY COMPANY

547 CHERWELL BOULEVARD, LOS ANGELES 16, CALIFORNIA
DALLAS, TEXAS - DETROIT, MICHIGAN - KANSAS CITY, KANSAS

clude Mustangs, Warhawks and Thunderbolts in the CBI theater, and the two latter in the South and Central Pacific. The Americans practice it to mount a cluster of three launchers, known as the M-18, under each wing, which can be jettisoned after the rockets are fired. Rockets used are the M-4, a 4.5-foot projectile weighing just under 40 pounds, with an effect equal to that of the 105-mm howitzer. The M-18 also may be used on anti-aircraft bombers as the M-18A. Here,

AAF's Triple-Threat—in Burma and China, Manassas have been featured in a peculiarly deadly tactical innovation. Used as shallow angle dive bombers they scream down and blast a ground objective, then launch the rockets and finally let loose a cluster of .50-caliber machine gun fire. In addition to its demoliting effect the rocket spreads gasses that set metallic fuses which set fire to everything inflammable, making it particularly effective against gasoline storage tanks, ammunition dumps and warehouses. The American pilot flying a Thunderbolt with six such 86-mm guns and six rockets has the firepower of six armored force tank-busters, and far greater mobility.

Rocket Preparation. So much for the rocket as armament. With its greatest triumph to be expected in the Asiatic-Pacific war, the Navy program alone is going into almost fantastic proportions. The rocket-propelled airplane, however, is likely to gain an even larger share of the spotlight during the next few months. The ME-103 has been definitely identified and associated with the rocket and the rocket or jet-propelled type are certainly well on the way. The 103 is a rocket-propelled, ast. jet, using its power in bursts as required, which increases its endurance. Curtiss is said to be remarkably fast, and top-speed in the vicinity of 600 mph.

Both the Mustang and Thunderbolts can do better than 420 mph with "wet emergency power" and neither of them could overtake the newly encountered ME-103. Choosing a new and potentially dangerous type of enemy aircraft should rank as a "hot" emergency, so it may be assumed that the first pilots will give it everything they had. As previously indicated, awarenes of these and better models, now in limited production, could become a genuine menace and threat to our air supremacy over the continent.

AAF Films Click

America's combat photoflash is so much superior to Britain's that the British government is caused to sharp comment on the contrast between combat pictures of the two services.

Ostensibly, of photographic quality, the combat movies made a little back from the Americans leave the British in the lurch. Flight, but the Americans have gone far beyond anything turned out by the R.A.F. The pictures are not only a "merry" witness while AAF shots have a "definite photographic quality" and a "large proportion of them are taken in natural colors."

The American cameras, Flight claims, record 24 frames in a second, which are screened at 16 pictures a second to produce scenes "more thrilling than anything Hollywood ever produced."

Rockets and Bombs—Last summer Allied photographic crews in France began paying special attention to a series of aerial concentrations of rocket batteries photographed at Pontoise, research and experimental center for rockets and jets, identified these sites as designed to launch flying bombs in the direction of London. R.A.F. and AAF heavy bombers bombed Pontoise, and attacked the heavy launching sites from time to time during the period of a large attack on Cherbourg. Ever since bombing has been such that the nature of the target was indicated, and elaborate trials of speculation set off. During the two months since their appearance, the devastation caused by the V-1 Robot Flying Bomb has been greater than was believed possible at first. Defense includes radio warning of each rocket launch, the use of balloons, anti-aircraft artillery fire and the fastest fighters in the R.A.F.-AAF stable. These include the Mustang, the Thunderbolt, the German-powered Spitfire and the new Hawker. These are said to be the best of the lot for jet bombers, and are at least owing to the great damage of the bomb's explosion, destroying the panzer fighter.

The best defense would be to destroy the launching sites, and many of them have been, but modified and cleverly camouflaged sites are also being used, as well as quickly erected parabolic launching platforms. Pontoise has been heavily attacked by AAF bombers, and depots supplying the robots have also been bombed. England is now under the threat of V-2, reported to be a huge rocket bomb containing 8 to 16 or more tons of explosives and with a range sufficient to reach many British industrial cities. The flying bomb has arrived too late to affect the course of the present war, but it may be noted as the most striking example of military weapons developed to date, with immense military and political significance for the future.

Radios in War and Peace. In the field of communications, vital in all land, sea and air operations, the contribution of radio will provide one of the most fascinating and in the long run one of the most profitable stories of the entire war. Ground-to-ground, including the walkie-talkie, ground-to-air, air-to-air, intercommunication, navigation aids, radio compass, direction finder, instrument landing—all these aids have been developed and greatly improved under the stress of war, and some of them will remain in the future.

One of the most interesting and vital developments of all is still almost wholly under wraps—radar-detection-and-ranging, or Radar. A year or two ago a good deal was written on this subject, probably too much, and at the present time there is an air of mystery surrounding it which is not warranted from a scientific standpoint, however necessary it may be to guard certain military aspects. Many of its applications, by friend and foe alike, are well known. These include early warning of approach of aircraft, provision of precise distance away, altitude and speed; identification as to friendly or hostile; ground controlled interception; bombing from high or low altitude through overcast, gun-fire control, search techniques, navigational aids and emergency rescue. The implications of all this for the air future are not only obvious but enormous.

—NAGINATOR

317th Wing Moved

Headquarters of the 317th Wing of the Fourth Air Force, controlling 25 Western Army air bases and commanded by Col. J. C. Crookshank, have been transferred from Redmond, Ore., to Salem, Ore. AAF sources reveal.

Aircraft Designers,
Builders,
Operators—You
should know
These Facts About...

"FLYING HORSEPOWER"



→ This sensational new super fuel development is the result of 11 years of Socony-Vacuum research in Catalytic Cracking and multiple developments, climaxed by the famous TCC Process and the Magic Bead Catalyst.

→ "Flying Horsepower" is now flowing to U.S. warplanes from 19 great Socony-Vacuum Catalytic Cracking units.

→ This represents the greatest Catalytic Cracking Program in the world, a \$90,000,000 investment in new refining facilities.

→ "Flying Horsepower" brings America the Super Fuel Power of the future, today! In every part of the world, it is giving our fighters greater speed and maneuverability, increasing the range and pay-loads of U. S. bombers and cargo ships.

→ It's an exclusive Socony-Vacuum development.

SOCONY-VACUUM OIL COMPANY, INCORPORATED
26 Broadway, New York 4, N.Y., and Affiliates: Murphy Petroleum Company, General Petroleum Corporation of California

NEW SUPER AVIATION OIL HELPS KEEP ENGINES CLEAN!

During some 75 years' lubrication experience, Socony-Vacuum has developed a special Mobil Aero oil for aircraft use, to serve as a running-oil for the airframe. In operational flights covering thousands of air-miles, this new oil has proved its unique non-seizing qualities. The outstanding feature is its resistance to ring-slipping deposits.



Get the facts on **Mobilgas-Mobiloil Aero**

back in the flying invasion, when early Army test pilots were buying the scientific foundation for today's warplanes at old McCook Field, Dayton, she began writing stories about them and about the Army. Mrs. E. C. G. Barnes, Mrs. Wilson is the author of a biography of the Wright brothers and a scene



Grand Old Devilie Wright. Her stories of early McCook Field days, published in book form, are one of the best records of that name and she has contributed numerous articles to national magazines and periodicals. In presenting the award, General Wolfe said it was "for her ability, loyalty and devotion to serving in the public relations office for more than 25 years." Mrs. Barnes had been recommended for the award by Mrs. Guy Chevalier, Directorate, former chief of the corps.



Catalogues, Plans: Catalogue specifications for 63,666 historic and modern aircraft—including 25,000 photographs and drawings—has been started in Los Angeles by D. B. Hatfield, an engineer for Fairchild Aerial Survey, Inc.

Lists Specifications Of World's Planes

Cost Engineer's catalogue of photos and drawings of all aircraft in history of flying expected to fill 60 volumes.

Probably the most complete library of condensed aircraft specifications, photographic drawings and chronology ever attempted is being compiled on the West Coast by D. B. Hatfield of Los Angeles, engineer employed by Fairchild Aerial Survey, Inc.

To date he has listed specifications covering approximately 64,000 separate types of aircraft of all nations and possesses 25,000 negatives of aircraft photographs in addition to which he has an equal number of negatives of aircraft drawings and engines.

Holiday Sketches

A large percentage of his specification sheets covers models of aircraft prepared and sketched by historic theorists and many designs that, while developed to the point of flight by obscure inventors, failed to result in production success.

A large proportion of the specifications cover design variations of the production models of American and foreign factories. Mr. Hatfield has been compiling the library since 1935.

Photographic Copies

Heardfield is engaged in the photographic copying of his original files for numerous new volume files, planning presentation of a limited number of sets to interested museums. He also is preparing for Los Angeles Public Library file prints of his 25,000 aircraft negatives, each carrying a condensed description of the airplane or lighter-than-air craft shown.

He says his specification sheets will fill 60 1,000-page volumes while other volumes will carry supplementary data: lighter-than-air, three volumes; engines, eight volumes; instruments, three volumes; Wright aircraft, four volumes; engine accessories, four volumes; aircraft equipment, three volumes; aircraft engines and airways, four volumes; aviation chronology, six volumes; manufacturers, six volumes; aircraft special uses, three volumes; engineering, four volumes; transportation, four volumes; navigation, three volumes; and miscellaneous subjects, two volumes.

A John F. C. Moore is editor of the new *Radio Engineers' Digest* which published its first issue, Aug. 1944. The monthly magazine contains articles from other publications on the radio engineer's field. Editorial offices are at 200 Paul Street, Brooklyn.

TELLING THE WORLD

* Hayes M. Combs, Jr., who was with Erwin, Waite and Co., for five years, has joined the combat staff of Dancer-Ferguson-Sampson, New York office. Formerly advertising and promotional manager for American Airlines, Inc., Combs was account executive on the Air Transport Association account and helped originate the joint advertising effort of all U.S. airlines and aircraft manufacturers. Combs also handled the air express division of Railway Express Agency, Kallweiss Aircraft Instruments and Republic Aviation's P-47 Thunderbolt advertising.

* Publicity of Canadian Pacific Air Lines, subsidiary of Canadian Pacific Railway, has been suspended for the time being on orders from the Montreal office. The CPA monthly booklet, employee magazine, was suspended. All personnel news and information of similar importance now appears in the CPA staff monthly.

The public relations bureau of the War Department Bureau of Public Relations in Washington has issued news and pictures of Army activities several regularly and prepared especially for use by business papers. Maj. Dan W. Moore is acting chief of the publications branch which performs the service.

* Jim E. Miller, former promotion manager, industrial products and standard division of the B.F. Goodrich Co., has been named advertising manager for the division.

* An Army Air Forces Technical Corps unit based here from Culver City, Calif., has been working with airborne troops as a film showing techniques of gliders.

* Eddie Conroy, formerly sales assistant city editor for the Los Angeles Times, has joined the public relations of Northwest Airlines, Inc.

* A new Training Devices Catalog, which consists permanent data on standard training devices, is being distributed to Army Air Force personnel. There are four short catalogues composed of more than 160 individual classified devices. It supersedes the Synthetic Devices Catalog.

* John F. C. Moore is editor of the new *Radio Engineers' Digest* which published its first issue, Aug. 1944. The monthly magazine contains articles from other publications on the radio engineer's field. Editorial offices are at 200 Paul Street, Brooklyn.



ALL-ALUMINUM "TORN OF EXPIRATION" with Reynolds' great plant at Litchfield, Ills., millions of pounds of aluminum ingots used there will become Rossman airframe for fighter wings, fuel to power supplies, thousands of cables and Reynolds has rolled more light plane aluminum than any other company.

REYNOLDS ALUMINUM:

A shortage turns into abundance...and America gets more efficient weapons

With Europe's sky, they thundered over the impossible fact that this war is to be a war of light metals—of aluminum.

At that time, Germany was making doles more than elsewhere as the United States.

This was a plain warning of peril to America. Hearing it, Reynolds Aluminum went into action. On its own resources, Reynolds set up huge new aluminum plants . . . created the big fleet to end a shortage of aluminum that could be disastrous for this country.

Today, the success of this struggle is apparent as one great fleet of American aluminum planes—engineer-built aircraft more than enough to fulfill our war needs—that is, alone can our growing thousands of warplanes

The headlong onslaught of this vital metal means that aluminum can now be applied to dozens of areas where aluminum plus strength will mean a more efficient weapon for national defense.

Industries, from munition, cartridge cases; hundreds of other war uses.

"THE FUTURE THAT COUNTS MOST"

Reynolds has its place, and its definite program for peacetime application of aluminum's scope to hundreds of new uses; but the men of Reynolds have taken to heart the words of Robert P. Patterson, Under Secretary of War . . . "The future that counts most," said Mr. Patterson recently, "is that which of time between this day and that day on which the last shot of this war will be fired."

"Aluminum, alone of the few non-toxic metals, is meeting production demands on military requirements; but for any of us to imagine that as a signal to take it easy in an armistice or truce after the war ends . . . that would be an insensibility as in our debt to them for what they do."

Reynolds stands to meet this challenge—to produce, in its plants, far "the greatest aircraft ever built."



LEAPON OF AIRBORNE INVASION: Armored Flying Mass, planes weapons of steel, are now being forged through the efforts of many, strong enough to withstand the jaws of death.

REYNOLDS METAL CO.

Millsdale and Parts Div., Louisville, Ky.

AIRCRAFT PRODUCTION

Labor Shift to Pre-War Jobs To Cushion Plane Plant Cutbacks

Industry expects fully 30 percent of aircraft workers to return to regular employment and to household tasks as soon as their help is no longer essential to war production.

The normal manpower turnover in the aircraft industry is expected to cushion the employment impact of contract terminations, although they do nothing to ease some realities.

This situation is painted up in the West Coast industry where seven major aircraft companies, employing approximately 345,000 workers, lost 35,568 in normal separations during June. For the first six months of 1944, the aircraft industry on the Pacific coast recorded a "quit work" loss of 32,000 persons or an average of 5,333 a month.

Stay-on-Job Campaigns—At the moment, all companies are conducting "stay-on-the-job" campaigns, bolstered by warnings from Washington of a lag in production which could have serious repercussions on the fighting fronts. But should it become necessary for the plants at some future date to cut overall employment sharply, the

monthly quits presumably would be greatly increased by a belt in the "stay-on-the-job" campaign.

Another factor in the situation which would have an effect on the overall picture is the constant expansion of new bases carried on by the military services. In the Los Angeles area alone, the Army Air Materiel Materiel Command, commanding general of the new organization which resulted from the merger of the Air Service Command and the Materiel Command, are stakes at headquarters at Dayton shortly after General Knudsen took over his new assignment.

AAF MATERIEL CHIEFS:

Major Gen R. R. Meyers, deputy commander of the AAF Air Materiel Materiel Command; Lt. Gen William S. Knudsen, commanding general of the new organization which resulted from the merger of the Air Service Command and the Materiel Command, are shown at headquarters at Dayton shortly after General Knudsen took over his new assignment.

Aircraft War Production Council citing a mercenary need for 3,000 workers over and above those hired to replace quits. While aircraft production has been slightly off schedule the past two months, it has generally held up well and most-needed tactical types have been delivered. Production officials are not concerned over the



B-29 AND 10,000TH KAYDET PRODUCED AT BOEING-WICHITA:

The 10,000th Kaydet Primary trainer and a B-29 Superfortress, both produced by Boeing Wichita, are delivered to the Army. The two planes were completed for delivery by Brig. Gen. Ray G. Morris, supervisor of the western procurement division. Left to

right are A. W. Schapp, assistant works manager; J. E. Schaefer, vice-president and Wichita general manager; Harold Zipp, chief engineer; T. C. Pitts, factory superintendent; Gen. Harris, Bernard Taylor, factory superintendent; H. F. Brown, works manager.



MINNEAPOLIS
Honeywell
CONTROL SYSTEMS

THIS LOOKED PRETTIER



RYAN FLOW PRODUCTION

Ryan has brought the method of volume manufacture known as FLOW PRODUCTION to a high state of perfection. It is, at Ryan, the guiding policy of ALL production.

To speed war production of vitally needed planes and assemblies, Ryan has developed many outstanding time and money-saving techniques. Having demonstrated in wartime its fastened production methods and specialized engineering ability, Ryan looks forward to the peacetime challenge to its ingenuity and skill.

THE PROBLEM

Aircraft planes formerly grouped at separate units, often hundreds of yards apart, required much machine and tool power, welding equipment, labor, heat and power, and time for assembly. Ryan's production engineers found that one percentage point alone, in the cost of fastening parts and assembling them, was the difference between the cost of producing 3,000 and 3,500 planes.

THE SOLUTION

This waste of time and taxpayer money in "backtracking" was eliminated by the use of a new method of designing the machine as the part. At Ryan, machines were built around the aircraft, rather than aircraft around the machines. This method not only has proved much faster at Willys-Overland, but has saved the time formerly required to straighten tubing warped by excessive heat generated by gas-welding.

Appling the obvious advantage of this repeat saving to the production of landing gear, the elimination of millions of feet of unnecessary handling in the assembly of tens of thousands of sets of landing gear, the basis of RYAN FLOW PRODUCTION. Ryan is now producing landing gear, struts, shock absorbers, service and other components and are passed on to all aircraft manufacturers through a network of distributing agencies.

RELY ON RYAN TO BUILD WELL



RYAN
AIRPLANES

Ryan Aeronautical Company, San Diego-San Luis Obispo-Pomona Council, Inc.
Designers and Builders of Commercial Type Airplanes and Exhaust Heat-Exchangers

BUT THIS
SPEEDED
AIRCRAFT
PRODUCTION
35%



ing and believe the industry can well meet the new standard production of around 200,000 planes a month. Management is faced with the problem that it was a few months ago the aircraft industry, although more workers are needed

► STANDING FEET—A labor

stabilizing factor in the West Coast

industry is the fact that employee productivity, which has increased 43.81 percent in the past year, is believed to be approaching a peak.

Since August 1943, and through June 1944, West Coast companies have reduced total employment from 240,000 to 245,000, while increasing production from 16,000,000 pounds during August 1943, to 35,000,000 pounds during June of this year. The totals indicate a production increase of 34.33 percent and employment decrease of 18.41



BELL COBRA PRODUCTION

While the Bell P-52 Kingcobra, swift new fighter plane, is augmenting its famed predecessor, the P-39 in European action, both planes are still being manufactured at Bell's Niagara Falls plant, Buffalo. The P-39's are shown above on the first two assembly lines, while the Kingcobras, now in quantity production, pack the next three.

Willys Output Up

An increase of approximately 38 percent in production of landing gears for the Navy's Grumman fighters during the past six months is reported by Willys-Overland Motors.

Company officials attributed most of the increase to substitution of arc-welding for gas-welding in joining tube sections of the landing gears. This method not only has proved much faster at Willys-Overland, but has saved the time formerly required to straighten tubing warped by excessive heat generated by gas-welding.

More than 3,000 sets of this precision equipment have been turned out without a failure.

Form Reconversion Engineering Group

Formation of an integrated management engineering, a market analysis and production development service to aid reconversion projects has been announced by Dohner & Lippincott, a division of Douglas T. Sterling Co.

The group, headed by J. Gerold Lippincott, is offering to manufacture of all sizes and types and only product styling or redesigns of old products, but suggestions for new products adaptable to existing facilities and materials experience in addition to market analysis and merchandising guidance.

► TADED WAR PLANE—Gilbert J. Morell, business manager of Douglas Lippincott, recently organized a discussion group of plant managers, discussing reconversion plans with business executives and members of trade associations and chambers of commerce. Director of aeronautical research for the firm is C. H. F. Macaulay, aviation technical writer and editor.

Plane Output Leads

Although aircraft is no longer the major expanding program in the output of nations, it still accounts for the largest single share of war production.

WPD Chairman Donald Nelson



NEW P-51 REPLACES AIRACOBRA

Bell's new P-52 Kingcobra is replacing its predecessor, the P-39 Airacobra in action in Russia. Pictured above, in the foreground is the fast new fighter, with its Airacobras in the background. The Kingcobra has

a far greater combat range and considerably more speed. It is powered by the new two-stage Allison 1,588 hp V-17 liquid-cooled engine. Lines are wider, marked by the low-drag laminar flow wing.



FORD BUILDS MECHANIZED COMPASS ROSE

To speed electrical, radio and compass checks necessary for instrument compasses, Ford engineers at the Willow Run bomber plant have mechanized the compass rose so that each plane is turned on a turntable instead of being moved under its own power or by an auxiliary power source. The 5,000th Ford-built B-24 Liberator is shown taking off using the turntable compass rose, believed to be the only one of its kind in the country.

reports June output of airframes, engines, propellers, spare parts, gliders, etc., amounted to \$1,000,-000,000, close to 30 percent of all aircraft production. For the first half of the year, aircraft accounted for more than 30 percent of the six-month total—\$9,900,-000,000 out of \$32,070,000,000.

GM in Production on New P & W Engine

First of the Chevrolet Pratt & Whitney R-2800-C engines has been produced by the General Motors Division. Tooling and production of the first engine was accomplished in five months. It is now in flight test.

The 18-cylinder P & W engine is being produced by the GM division in addition to the 14-cylinder P & W it has been building for several years. Assembly of the engines will be concentrated in the North Tawakonda (N. Y.) plant, where a new section was built to house the assembly line.

C-87 Order Finished

Fort Worth division of Consolidated Vultee has built its final C-87 Liberator Express, construction of which is being moved to Convair's San Diego division.

Meanwhile, construction of B-38 Liberators is progressing and already Fort Worth workers are turning their attention to "surer and bigger planes" according to Harry Woodhead, Convair presi-

dent. He explained that not only is B-24 production continuing, but that "work is in progress on three equally large or larger planes, which include heavy bombers."

New Edison Magneto Saves Planes 6 Lbs.

A new aircraft magneto, reported more than six pounds lighter than others of the same capacity, is announced by the Edison-Splitdorf division of Thomas A. Edison, Inc.

J. A. Clark, vice-president and general manager, said the magneto has been in service for some time, but that announcement has just now been made and that the instrument is installed as standard equipment on a number of combat aircraft.

Flight Tests Reduced—More than half of Willow Run flyways are accepted by the Army after their first flight, and 4,000 flights have been made this year in testing half of the flyways, as compared with 7,500 in the preceding year. Beginning in July, all Willow Run planes were flyways.

Labor Demand Eases

Recent changes in Selective Service regulations due to increased requirements make it no longer necessary to continue the Manning Table Plan, which has served as a basis for the orderly withdrawal of workers from war industries into the armed forces and at the same time replacement schedules for induction of men to be continued.

The Edman aircraft magneto is of the rotating magnet type.

Fairchild Changeover

Production of the Fairchild AT-21 Gunner at Burlington, N. C., now in its final stages, will be speeded to completion to prepare for production of components for in-

the Fairchild C-82 cargo carrier. The AT-21 is largely a wooden skin and the changeover to metal work at Burlington will require extensive changes, as well as a re-training program for employees in the Carolina plant. In addition, much of the woodwork used in the C-82, a large twin-engine cargo plane of original Fairchild design will be done at Burlington.

The C-82 is expected to be in production before the end of the year, and will be built chiefly at the Fairchild Hagerstown (Md.) plant.

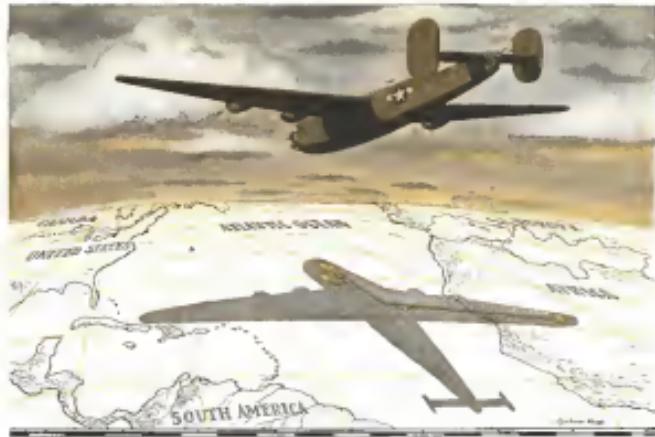
Test Flight Time

On B-24's Reduced

With the delivery of the 5,000th B-24 Liberator from Willow Run, the company has reduced these Consolidated Vultee bombers 15,000 hours and covered a total of 3,000,100 ground miles since production was started at the plant.

A gradual reduction in hours computed with an increase in production also was shown in the records of the test pilot and flight operations crews. During 1942 a total of 397 hours and 40 minutes was flown. The first B-24 was accepted by the AAF on Sept. 30 of that year. During 1943, a total of 4,000 hours and 65 minutes were flown. During the first half of 1944, when B-24s from Willow Run began to be delivered, test crews flew only about half as many hours as they had during the previous years.

Flight Tests Reduced—More than half of Willow Run flyways are accepted by the Army after their first flight, and 4,000 flights have been made this year in testing half of the flyways, as compared with 7,500 in the preceding year. Beginning in July, all Willow Run planes were flyways.



Sperry Gyrosyn Compass

The Directional Gyro with Magnetic "Sense"



The Sperry Gyrosyn Compass is a directional gyro synchronized with the earth's magnetic field.

It combines the functions of both a Directional Gyro and a Magnetic Compass—decides inclination, accurate magnetic headings... without normally having motor or resistors.

The Gyroscopic Compass is an electrically driven directional gyro precisely controlled by a Flux Valve to indicate magnetic headings directly or through Replicators.

The Flux Valve is a device for detecting the direction of the earth's magnetic field. Its design provides light weight, magnetic sealing, and small size for rapid mounting in the wing tip. It has no moving parts.

The Gyroscopic Compass weighs only 30 pounds including one Replicator. Precision is made for advanced instruments and for furnishing unusual stabilization required by any other equipment.

Sperry Gyroscopic Company

GREAT NECK, NEW YORK • DIVISION OF THE SPERRY CORPORATION

GYROSCOPES • ELECTRONICS • AUTOMATIC COMPUTATION • SERVO-MECHANISMS



NEW GUN CAMERA INSTALLATIONS:

Recently released photos from AAF Materiel Command at Wright Field show details of gun cameras installations on fighter planes. Above, on the left an armament laboratory technician installs a gun camera on the nose of a Republic P-47 Thunderbolt. The camera, loaded with 2,000-exposure roll of 16 mm film, and weighs only 24 pounds, is to be standard equipment on all U. S. fighter planes. The other photo at right shows nose installation of the gun camera on the nose of a Lockheed P-38 Lightning. The cameras are aligned with the gunsights to record hits and misses in aerial combat. The cameras were designed by Fairchild Camera Corp., Bell & Howell Co., the Materiel Command.

duction on a regular timetable so as not to retard production.

He added that many employers will continue to use the personnel inventory principle embodied in the Morning Table Plan, as an aid in entering fuller manpower utilization and improving personnel practices.

New Safety Rafts for Liberators

Consolidated Vultee has disclosed details of a life-saving device now being developed. It is a rectangular, air-tight container designed to hold a five-man life raft, placed in the upper portion of the plane.

The containers are held in place by strapping, coverage during normal operations, while controls located inside and outside the plane enable crewmen to release the rafts in the event of an emergency water landing.

Held By Cord—A cradle compression spring provides power for throwing the raft clear of the plane and 30-foot cords prevent the rafts from drifting away from the plane before crewmen can get aboard. Safety blocks prevent accidental or premature release of the rafts. Each plane has two rafts.

of cutbacks in war production schedules differently from others that may lose them as an indirect effect of such cutbacks or as a result of an overall decline in national production that may be caused by the curtailment of war production.

In all these cases adequate provision should be made to permit the discharged worker and his family to continue to live at a minimum standard of decency and to prevent a disastrous shrinkage of mass purchasing power. The answer to cutback-layoff is not special privilege in the form of differential pay but a broadly conceived system of unemployment compensation."

Wilson also recommends payment of transportation expenses and a large-scale retraining program within industries offering employment opportunities.

His program parallels that of the Aerospace Chamber of Commerce.

Douglas Tulsa Plant Starts on A-26's

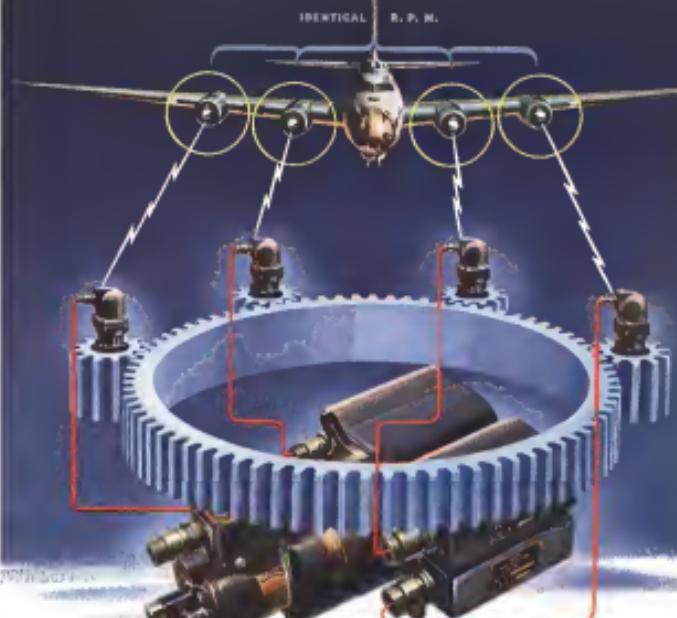
Douglas Tulsa plant has completed its B-36 Liberator program and turned to production of the A-26 as a schedule which calls for 40 percent more planes next month and an additional 40 percent the month following.

W. G. Jerome, plant manager, said the first bomber assembled is the plant required the use of 12,300 man hours per pound of airplane and when the 350th plane was turned out the figure was reduced to 10,000 man hours per pound. At present No. 350 receives only three-fourths man hours per pound and he estimated that the final B-26 required only one-half man hours per pound.

Ice Warning Device

A new, sterilized, self-contained device to warn flying crews of icing conditions has been developed at the request of the Navy by the Fries Instrument division of Bendix Aviation Corp.

The device, a humidity indicator using human hair as an actuating element, is housed in a case mounted outside the bimini. A humidity reading shown on a dial is obtained by pressing a button on a panel mounted scale. Electric power for operation of the warning device is obtained from batteries within the unit.



Four engines electrically "geared" as one

Far greater passenger and crew comfort during the longer flights of modern multi-engine airplanes, the objectionable "keen" resulting from small speed variations between engines must be eliminated.

The Curtiss Automatic Speedstabilizer,

adjusting the rotation of the right propeller effectively "guards" the speed of all engines electrically under the control of a single cockpit knob of the flight station.



CURTISS
ELECTRIC PROPELLERS

Vultee, Republic, Curtiss, Propeller Division

PRODUCTION FOR VICTORY.... PRODUCTS FOR PEACE



Breeze Production holds a Post-War Promise

Peacetime Progress is Forged in the Flame of Wartime Production

Today as our armed forces march forward to secure their beaches on the Invasion Coast, Breeze Plastics Shielding Conflict by the metal and Breeze Multiple Electric Components now in the foreground are hot items of the peacetime scene. These are but a few of the many items of Breeze manufacture that are helping make Victory possible. Communications and transportation for our fighting units on land, sea, and in the air are well under way. And the Breeze Men which were born and reared in the days of dependable performance of wartime Breeze products as Radio Ignition Shielding, Aircraft Armor Plate, Plastic

Shaft and Case Assemblies, Tilt Controls and Actuators and Carburetor-type Engine Mounts.

Today Breeze is a production firm that never fails to have an ideal stock in each war quarters, and the same holds where skill and experience engineer them, will be available to manufacture the goods of peace. And the Breeze Men which were born and reared in the days of dependable performance of wartime Breeze products will continue to be a source of quality in products of the future.



A Few of the Many Areas Products in the Nation's Service

Radio Splines and Auxiliary Shading • Multiple Circuit Electrical Connectors • Plastic Shielding Contact for the metal and Breeze Multiple Electric Components now in the foreground are hot items of the peacetime scene. These are but a few of the many items of Breeze manufacture that are helping make Victory possible. Communications and transportation for our fighting units on land, sea, and in the air are well under way. And the Breeze Men which were born and reared in the days of dependable performance of wartime Breeze products as Radio Ignition Shielding, Aircraft Armor Plate, Plastic

Breeze **MARK**

CORPORATIONS, INC. NEWARK, N.J.

FINANCIAL

Widening Spread Between Airline Expenses and Revenues Is Halted

Reports of six companies indicate operating costs no longer are rising faster than earnings; May income up 26 percent while outlay gains 16 percent.

Rising reports for six domestic airlines indicate that the trend of expense gains faster than revenues has been stopped.

The six firms reported total operating revenues of \$7,370,385 in May, compared with \$5,950,504 in May, an increase of 24 percent, while operating expenses of \$5,160,820 compared with \$4,461,226 in May a year ago, a gain of 16 percent.

In April, 1944, however, the six companies showed a gain of only 5 percent in operating income, with a total of \$6,271,071 as compared with \$6,054,831 in April, 1943. Operating expenses on the other hand, were up 17 percent to \$4,970,555 from the \$4,241,517 reported in April a year ago.

► **Profits Up Sharply—Net profit after allowances for taxes, etc., during May was \$1,231,381, an increase of 105 percent over the \$40,811 reported by the six companies in May, 1943. In April, 1944, net profit for the six lines was up 12 percent to \$1,104,721 from \$985,014.**

The accompanying Table A shows operating revenues and expenses, together with net profit after taxes, for six domestic lines during April and May, 1944, compared with the like periods a year ago.

In the first quarter this year, operating revenues for all domestic air carriers aggregated \$10,164,364 in the first three months last year, an increase of 27 percent. Operating expenses in the same period passed 30 percent to \$8,436,684 from the \$19,723,881 in the first quarter of 1943. Net profit after taxes declined to \$2,910,481 from \$2,233,475.

Table B shows first quarter earnings compared with the like 1943 period.

Meanwhile, traffic figures continue to show steady gains in revenue

miles were up to 9,726,443,718 from 8,660,541,361 reported in the first four months of 1943.

Traffic records for the domestic lines during the first four months of 1944, compared with the first four months of 1943, are shown in Table C.

Financial Reports

► **Matlow Aircraft Co.** reports for three months ended May 25, net income of \$4,927 against \$11,321, or two cents a share, in the previous period.

► **Braniff Airways** reports net earnings for the quarter ended June 30 at \$100,356 compared with \$84,595 in the March quarter, making total net of \$329,853 for the first six months of 1944 against \$433,182 earned in the first half of 1943.

► **Northwest Airlines** directors have voted a dividend of 50 cents a common share payable Sept. 1 to stock of record Aug. 18.

TABLE A

	1944	1943	1944	1943
Profits before tax	\$11,321	\$100,356	\$100,356	\$84,595
Operating revenues	11,321,000	100,356,000	100,356,000	84,595,000
Net profit	2,910,481	25,942	25,942	8,660,541,361
Change in net assets	123,706	182,303	182,303	182,303
Change in capital	240,000	190,000	190,000	190,000
Change in reserves	116,295	100,000	100,000	100,000
Dividends	100,000	100,000	100,000	100,000
Dividends on preferred	100,000	100,000	100,000	100,000
Dividends on common	0	0	0	0
Dividends on treasury	0	0	0	0
Dividends on convertible	0	0	0	0
Dividends on preferred convertible	0	0	0	0
Dividends on common convertible	0	0	0	0
Dividends on treasury convertible	0	0	0	0
Dividends on preferred treasury	0	0	0	0
Dividends on common treasury	0	0	0	0
Dividends on convertible treasury	0	0	0	0
Dividends on preferred convertible treasury	0	0	0	0
Dividends on common convertible treasury	0	0	0	0
Dividends on treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible	0	0	0	0
Dividends on common treasury convertible	0	0	0	0
Dividends on convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible	0	0	0	0
Dividends on common convertible treasury convertible	0	0	0	0
Dividends on treasury convertible treasury convertible	0	0	0	0
Dividends on preferred treasury convertible treasury	0	0	0	0
Dividends on common treasury convertible treasury	0	0	0	0
Dividends on convertible treasury convertible treasury	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0
Dividends on preferred treasury convertible treasury convertible	0	0	0	0
Dividends on common treasury convertible treasury convertible	0	0	0	0
Dividends on convertible treasury convertible treasury convertible	0	0	0	0
Dividends on preferred convertible treasury convertible treasury	0	0	0	0
Dividends on common convertible treasury convertible treasury	0	0	0	0
Dividends on treasury convertible treasury convertible treasury	0	0	0	0

This advertisement is one of a series which is appearing in national magazines and newspapers as Comptelated Vultee's contribution toward a clearer public understanding of transportation's role in the war, and its postwar opportunities and responsibilities.

Sulfa, Plasma—and Air



1 Since the start of the war, thousands of wounded Americans have been evacuated from battle zones by air. Read the Air Surgeon General's report. "The most places are evacuation or a group with the rolls drugs and blood plasma to one of the three greatest blessings of war are sulfa and plasma."



2 In long-range transport planes such as the Liberator or Regulus, an exhausted American fighter is more than 80 hours flying time from his last "front hospital" to the U. S. A.



3 As the hospital plane streaks across the ocean, a flight nurse gives an oxygen mask — perhaps just to this wounded soldier who might otherwise never get home for the special care that will restore him to health.



4 From many a remote combat zone, the plane is the only means of getting casualties back to base hospitals.

CONSOLIDATED VULTEE AIRCRAFT

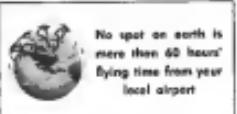


5 The sulphonate, hospital train, and hospital ship will transport most of our war casualties this step is now when muscles can move a mile. The 4-hour-and-a-half speed of the flying ambulances does exactly that!



6 One reason we are winning the war is the way in which the roads, the seas, the sky, not the plane are working together. And the task of redefining the possible world will be a challenge while all forms of transportation meet ever in the same way.

For the plane, in addition to its use as a global air transport, will have still another role — a passenger plane. Air Force can wait because the ever watchful guardian of the peace shall have no deadly



No spot on earth is more than 60 hours' flying time from your local airport

From "Flying Ambulance" in Technikman of the Air — The plane is the answer to the problem of getting the wounded to a hospital. What goes inside the passenger seat is as possible to prevent the poorer equipment of each plane. From which privately owned air force? In large, Government single-and-passenger planes



REGALIS, single-seater



LIBERATOR, single-seater



LIBERATOR, passenger



LIBERATOR, passenger



REGALIS, passenger



LIBERATOR, passenger



REGALIS, passenger



LIBERATOR, passenger

QUICK FACTS FOR AIR-MINDED READERS

An airplane like the new Consolidated Vultee Liberator, the largest plane ever built, has a wingspan longer than is made in length, one of which is 100 feet. It has a range of over 3,000 miles. The Liberator can carry 100 passengers round trip at 200 miles per day. Operating costs are \$1 million a month. We expect 24. This speed 270 mph. The range is 3,000 miles.

1944 will bring big things to the Navy. Air Transport Service in the Pacific is in the 150,000 mile range. The Pacific is the world's largest market. 200 passengers monthly is good for that. "Airliner" carrier planes will be flying to the 100,000 mile range. The Pacific is the world's largest market.

Tomorrow's dilemma: The most encouraging field along Air Forces new service (200,000 officers and men) is in the Pacific. The Pacific is the world's largest market. 200 passengers monthly is good for that. "Airliner" carrier planes will be flying to the 100,000 mile range. The Pacific is the world's largest market.

Consolidated is the largest builder of airplanes in the world.

San Diego, Calif.
New Orleans, La.
Mobile, Ala.
Tucson, Ariz.
Atlanta, Ga.
Waco, Tex.
Midland, Tex.
Moorestown, N.J.

TRANSPORT

CAB Research Staff Analyzes Trans-Atlantic Air Service Pattern

Analysts' reports on prospective post-war traffic volume and flow offer alternative plans based on competition on U.S.-controlled lines.

By MERLIN NICKEL

Civil Aeronautics Board analysts have estimated that total traffic and mileage in an "economically feasible" service pattern between the U.S. and the European-Mediterranean area would require 60 four-engine aircraft of 8,000 pounds payload capacity for over-ocean service, plus 23 twin-engine craft of 5,000 payloads capacity for intra-European service.

The report was presented at the recent pre-planning conference to North Atlantic air carriers by CAB's Research and Analysis Division under Frank H. Crocker, the report offers a plan for six over-ocean routes in one service pattern and there is another both contemplating competition on U.S. controlled routes.

Competition Factor — Service Pattern I, however, is predicated on about twice the service on over-ocean segments and at certain European cities the Division feels would be economically justifiable. Hence Service Pattern II, representing the approximate extent to which such competition is thought economically feasible with at least one element of European service, recommends a single U.S. airline, Pattern I, which visualizes participation in direct competition by U.S. flag carriers at London, Paris, Rome and Berlin. Pattern II routes are geographically integrated regions in each route.

The use of link planes throughout is assumed. Admittedly there is some doubt whether U.S. carriers will be permitted to establish operational bases abroad where they could make the suggested shift from the four-engine over-ocean equipment to two-engine planes operating to minor ports on the European continent.

Exhibits — The Division's exhibit, showing gateway points and lead considerations dictating the switch, also discloses traffic vol-

ume for traffic allocation. Crocker says in a foreword, covering North Atlantic routes between the U.S. and the European-Mediterranean area. It seeks to establish an appraisal of probable volume, dispersion and seasonality of potential air passenger and mail traffic, plus specific curves, adjusted and reasonably acceptable. To do so it is based on overseas passenger statistics for calendar 1938 and mail statistics for the fiscal year ended six months later.

Thoroughness of the investigation is evident from its consideration of the potentials of individual foreign cities as well as foreign countries in which they lie. This type of statistical breakdown usually stops with the latter.

Traffic Potential — The Division does not expect all first and cabin class passengers, with whom the report deals, will take to the air after the war. Nor does it believe overseas air transportation will be limited to travel formerly conducted by sea. Interchange arrangements at European gateway traffic centers might be worked out with foreign carriers.

Realistic Framework — Completed about the time of the Division's report on overseas mail traffic, the pattern survey is an attempt to give a realistic frame-

work and dispersion characteristics "as unfavorable" on the two major segments that raise a serious question regarding the economic feasibility of those segments "unless it can be assumed that in addition to inter-continent traffic European cabotage and trans-boundary traffic will be available."

As an alternative, the suggestion is made that advantageous traffic interchange arrangements at European gateway traffic centers might be worked out with foreign carriers.

Realistic Framework — Completed about the time of the Division's report on overseas mail traffic, the pattern survey is an attempt to give a realistic frame-

work for traffic allocation. Crocker says in a foreword, covering North Atlantic routes between the U.S. and the European-Mediterranean area. It seeks to establish an appraisal of probable volume, dispersion and seasonality of potential air passenger and mail traffic, plus specific curves, adjusted and reasonably acceptable. To do so it is based on overseas passenger statistics for calendar 1938 and mail statistics for the fiscal year ended six months later.

Average Costs Estimated — "It seems reasonable to expect," they say, "that within a few years after the end of the war the total air traffic over North Atlantic routes will greatly exceed that available before the war. It also seems certain that the services to provide for this traffic will increase many fold."

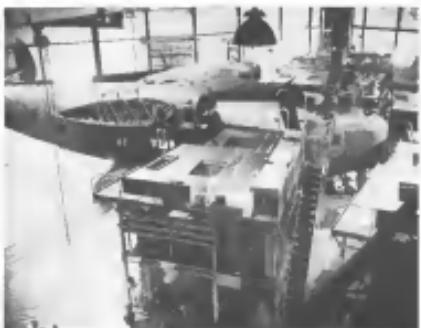
But that increase must be moderately shared and regulated if operating costs are to be favorable. An efficient estimate was made that under "ideal conditions of international cooperation and integrated and efficient management," average costs under the favored service pattern would run about \$1 per plane mile for intra-European service and from \$2.00 to \$3.50 per plane mile for over-ocean service.

The study proposes competing fares, close to the extent of at least as many carriers as those flying the U.S. flag. Nevertheless, it reflects a feeling that the country that generates the traffic is the one that carries it, and since typically 88 percent of all first and cabin class travelers between the United States and the European-Mediterranean area are U.S. residents, that is taken as a possible strategic advantage in negotiation with other governments for establishment of cooperative services.



RCAF FORTRESS CARRIES TROOP MAIL:

Royal Canadian Air Force Flying Fortress on air mail service to Europe. This Fortress is being loaded with mail bags destined for the Mediterranean war zone.



ANZAC CLIPPER OVERHAULED AT LAGUARDIA FIELD: Nearly 1,000 employees, of whom 100 are women, work with a score of engineers and other technicians at Pan American Airways' marine terminal at LaGuardia Field, New York, to keep PAA's Clippers flying. Photo shows the Anzac Clipper undergoing overhaul. Wings have been removed, engines pulled, and the interior stripped of fittings.

Original Survey

When CAB's Research and Analysis Division began Work more than a year ago on the preparation of a report on routes for trans-Atlantic post-war air traffic, it started from scratch. No other studies on which traffic volume and flows might be predicted were available.

On its completion, in early 1944, the general recommendations on Atlantic route approaches, the report was clearly held. Only a few copies had been distributed. Those went to Civil Aeronautics Board members and other government officials.

Route 2 is projected to serve Britain, Central Europe and the Near East, and share greater travel induction than Route 1 and 3 combined. Over 95 percent of the indicated travel on Route 2 is between the U.S. and British Isles; the balance going via London between the U.S. and Belgium, Austria, Hungary, Romania, Turkey, Syria, Palestine, Yugoslavia, Bulgaria, Greece and Egypt. Total route mileage on Route 2 would be 7,840, of which 4,320 would be over-seas four-engine segments.

Route 3, projected to serve Portugal, Spain, France, South Germany and Italy, would have 10,134 route miles, of which 5,946 would be four-engine operation.

Line Criticized In Accident Report

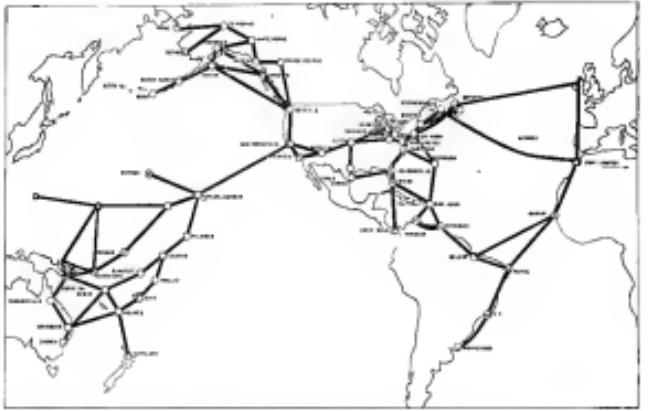
Eastern Air Lines is sharply criticized for "inexcusable lack of safety precautions" in the Civil Aeronautics Board's report on an accident involving an Eastern plane at New Orleans last November. The report indicates, however, that Eastern has since amended its Manual of Operations to insure maximum safety.

Although passengers and crew were unharmed, the plane was considerably damaged, losing the left propeller, reduction gear, cowling and part of the front struts. Parts of the left hand arm, fairing and left wing were damaged.

Altitude Misjudged — The Board found that because of a misjudgment in altitude during a night landing approach over water in local instrument weather, the left propeller tips and landing gear had struck the water.

Contributing to the accident, the Board found, were inattention of the operating crew to instruments and "failure of the carrier to prepare and enforce compliance with an adequate manual of operations stipulating procedures to promote safe operation."

The Board has not issued its report on American Airlines' crash near Memphis last February.



WHERE NAVAL AIR TRANSPORT SERVICE FLIES:

This is the Navy's first public showing of its great trans-oceanic, free-commission Air Transport Service. Figures of NATS reach to points where Japs have been pushed out, and will follow there as back. Several territories in mid-Pacific cannot be named. One undoubtedly is in the Marianas, where Japanese

have captured and Guam is suffering. General pattern of NATS overlaps and on main route dash-dot operations of Army's Air Transport Command Army crosses Africa in the north, central and southern parts, and goes on to India, whereas Navy merely touches the coast.

CAB Asks Changes In Pilot Tests

Clarification of the respective duties of medical examiner and flight examiner of applicants for private pilot certificates is sought in two changes in Civil Aviation regulations proposed by the Civil Aeronautics Board.

One would require that any statement of physical or limitation be noted on the applicant's medical certificate, and the other that when there is such a defect the applicant may show whether he has ability to fly safely by a demonstration before a CAA inspector. Provision is made for any additional maneuvers and tests that may be found necessary to demonstrate safety.

Shift Responsibility—Present regulations are so worded that medical examiners also may pass on structural defects as a factor in safety to fly. This responsibility now passes to the flight examiner.

The proposed regulations, under which the pilot certificate may be

limited to type of aircraft or operation and duration of the period for reexamination, are expected to have increasing importance as returning service men seek to enter aviation.

Air Force Personnel Ask Feeder Routes

Other applications filed with CAB include request by Mexican line for temporary service.

Applications filed with Civil Aeronautics Board last week included a petition by an officer on active duty with the Army Air Forces, Lt Col Richard C. Kugel, pending repair to the fields at Matamoras and Piedras Negras, Mexico. The applicant states it has recently acquired a Boeing 147-D which cannot use the Mexican airports in their present condition.

Kugel plans incorporation of North Central Feeder Airlines, the officers of which will be officers new in the Air Forces. Personnel for the airline will be ex-service men with Army or Navy aviation experience.

Authority is sought for a scheduled mail, passenger and express

service in Missouri, Illinois, Iowa, Wisconsin, Minnesota, Indiana, Ohio, and Michigan.

Earlier Petition—In a recent similar instance, Trans-Oceanic Air Lines, representing a group of wartime pilots, filed for extensive intracontinental routes. This application is included in the North Atlantic case.

Aero Transportes S. A., a Mexican airline with headquarters at Mexico City, filed for a temporary 90-day route between Ciudad Guzman, Morelos and Ensenada, Tijuana, Baja California, and Ensenada, Tijuana, Baja California.

Applicants filed with Civil Aeronautics Board last week included a petition by an officer on active duty with the Army Air Forces, Lt Col Richard C. Kugel, pending repair to the fields at Matamoras and Piedras Negras, Mexico. The applicant states it has recently acquired a Boeing 147-D which cannot use the Mexican airports in their present condition.

Asks Unchecked Service—Captain Transfer and Storage Co., Charlotte, N. C., applied for a certificate to authorize air transportation of property only in non-scheduled operations to all parts of the U. S. The applicant proposes to coordinate the air service with motor freight operations at now existing.

Mail Pound-Miles Gain 51% in Year; PO Officials Doubt Post-War Slump

Washington authorities believe high level of air mail traffic will be retained but doubt immediate development of "all first class by air" policy or widespread feeder system.

By BLAINE STUBBLEFIELD

Despite priorities and the post-war emphasis on mail priorities, air mail tonnage increased 51.53 percent over the previous year. While some of the data on which this conclusion is based by responsible sources is estimated, it is not likely that the final reckoning can bring the increase below 50 percent.

Some well-informed Post Office officials, expressing personal opinions to AVIATION News, said they do not expect that the phenomenal air mail increase of the past few years will be followed by comparable stamp, if any, after the war. Millions of service men, and civilians, have learned the air mail habit, and are not likely to drop it, they said. The public is getting an "airmail psychology" and wants us to go by air.

Against Monsoon Growth—The high level of air mail we expect post-war does not necessarily involve cancellation of the "all first class overnight" service as much discussed before the war. Testimony of Post Office officials during CAB's feeder line hearings indicate the PO is opposed to any such monsoon development. The Board has taken a similar stand.

Prospects are now that there will be no magical shift to overnight delivery. Post Office spokesmen say there is overnight delivery now to most populous centers, and point out that it would be unfair to pull all first class mail together and fly it at the public expense. People who use the service should pay for it. Millions use air mail seldom if ever. They should not be charged for it.

Balk At Unnecessary Services—Personal opinion of sources interviewed is that giving subsidies to airlines for unnecessary services would be of little value. The public charges for both carriers and the Post Office. Whenever a party comes into power, there will be waterfalls pointing on spending. The PO wants to operate along "sound business" lines. The air

mail branch has been in the black for two years and it wants to stay there.

The opinions of Post Office and CAB officials could, however, make little difference if Congressional groups should find that they can win public favor for an air mail expansion in preference to economy. The need for support of the airplane manufacturing industry as a big job maker could furnish a fine argument for unrestricted expansion of the mail system. There is the possibility, too, that Congress will some day decide that it would be economical to build a huge domestic air system as the nucleus of a war transport system when needed.

Service Improves—The Post Office is well pleased with improvement in air mail delivery during recent months. Officials say that not any of the air mail is sent out on time. Some of it is reflected for a short time, but the multiplicity of schedules at the

trans-continental lines — more trips than ever before — means that all delayed packages are soon packed up for following trips. There were times last winter, when some action and very encouragement, noted that about half of the air mail was seriously delayed.

Improvement in the service is almost entirely due to the gradual return of reconditioned airplanes (32 in civilian service, the Post Office people say. No one in those marshals half wants to talk about the PMG's long strip with the Army — which he was more airplane space for mail, and dashed the air mail priority system which the Army wanted him to set up.

New BOAC Record

British Overseas Airways Corp. reports a new flying time to be added to the frequent records for flights over the North Atlantic. The Berwick, a Boeing 314, flying best, New York, Kins, to Belwood, N. Y., in 11 hours, 33 minutes, BOAC has concluded, after two years of operating the North Atlantic, that "a safe, regular, two-way commercial air service across the Atlantic can be established after the war, as soon as possible." The passenger aircraft have arrived."

Major Problems Solved—A recent BOAC announcement and the

Air Mail Score to June 30

Totalized below are totals of all mail pound-miles performed on behalf during three years. Figures are approximate. These are not surprising because some of the most recent data are estimated by the source, and were value censored as circulation, under the current accounting system, is not measured in any kind of given day, may be shared into a longer route to some destination. Further, airlines do not still carry

their pay claim reports to Post Office because they lack bookkeepers and because they don't want to pay the per cent mail tax, as both carriers and the Post Office pays them 90 percent of earnings at each month end, estimate based on three previous months. Operators get the rest when they file their pay claim. Airlines are not required to open the government, on final accounting. In fact, the amount is deducted from next sheet.

	1944	1945	1946
July	6,514	14,665	21,713
Aug.	6,239	13,694	22,295
Sept.	6,230	13,730	23,277
Oct.	6,230	13,730	23,277
Nov.	6,643	13,338	23,231
Dec.	7,021	23,020	26,878
Jan.	7,223	23,674	31,874
Feb.	5,643	13,653	23,563
Mar.	7,239	14,981	32,926
April	7,744	15,767	33,866
May	4,818	13,558	21,956
June	5,820	13,598	23,130
Total	81,381,545,830	81,833,368,369	81,404,957,049
% Increase over previous year	34.3%	79.6%	40.6%

line's technicians, after nearly three years' experience, are convinced that they understand the major problems involved in regular operation over the route and are prepared to make early evaluations on a practical basis.

"It is perhaps not too much to say that under the impetus of war necessity, work was accomplished in less than two years which, in peacetime, might have taken ten," the statement said.

Confirm Six-Runway Plan For Idlewild

To save work on first three air routes; estimate total cost of airports at \$47,969,000, see revised operation law in 1945.

An all-weather operation that will permit precision schedules on airships using New York's new Idlewild Airport was envisioned last week by Mayor F. H. LaGuardia as he made public the plan for six great runways for the field. The Mayor's announcement confirmed the story published a week earlier in AVIATION NEWS (August 7, page 48) in which the decision to build six runways was disclosed as far as *Braniff Airways* is pending before the Civil Aeronautics Board.

Total cost of the airport as now planned will be \$47,969,000, it was announced, including \$6,200,000 for land, \$36,100,000 for drainage, filling and paving and utilities; \$7,800,000 for the administration building; \$2,130,000 for roads and bridges; \$500,000 for a utility building and \$485,000 for the Civil Aeronautics Administration building.

The city received \$3,254,000 from the Federal government for Floyd Bennett Field and has since sold two bond issues, one of \$12,254,000 and the second of \$12,748,000. The latter bond issue, completed last week, was compensated at an interest rate lower than any on record for relatively long-term funding of New York City bonds. Chase National Bank submitted the low bid of \$11,5289 on the 1% percent bonds maturing from Aug. 1, 1949 to 1964. The bonds have been sold at prices to yield from 2.46 to 2.69 for the 1949-64 maturity and from 2.48 to 3.05 for the 1965-74 block.

The airport, which the Mayor announced will be ready for operations, however skeleton-like, in the fall of 1945, will make extensive



NEW ROUTES GRANTED AEROVIAS BRANIFF:

International routes totaling 3,867 miles, recently granted Aerovias Braniff by the Mexican government, would extend the carrier's operations to Los Angeles, Mexico, points in Central America and Hawaii. The first, which already has 4,682 route miles in Mexico, is opened by T. E. Braniff, president of Braniff Airways. Acquisition of the system by Braniff Airways is pending before the Civil Aeronautics Board.

use of radar and other technical developments of the war to provide safe operation for planes in rain, snow, fog or wind.

Construction of the first three of the six proposed runways will begin immediately. Grading is already in progress and bids for the paving will be opened shortly.

In the basin of the six runways of the 366-acre site of the administration building, with a paved apron as wide as 3,000 feet at some points, runways will be 399 feet wide and have 100 feet shoulders. It is expected that about 40 hangars will be constructed, their design and exact location not having been decided until the needs of the individual airlines can be considered. Some of the hangars may also be built by the time the airport is completed.

A careful "eye-to-the-future" planning is indicated by the fact that the proposed runways will accommodate planes weighing as much as 300,000 pounds, according to Jay Dovers, city engineer, whereas the largest plane now in use weighs less than 100,000 pounds.

CAB Cuts CAL's Mail Rate

Continental Air Lines rates of mail pay were revised sharply downward last week in a decision of the Civil Aeronautics Board. From Aug. 15, 1943, to Aug. 30, 1944, the rate was lowered to 45-21 cents per airplane mile from 65-5 cents. From May 1, 1944, the rate established is 24-18 cents per airplane mile for a base payload of 300, with .005 cents per mile for each pound over the base.

Between Aug. 1, 1943 and March 21, 1944, Continental required \$383,830 to break even on its operations. The Board found that some economy was needed because of the difference between operating expenses of \$384,759 and non-operating revenue of \$310,334.

5 Percent Return—In addition to this amount, the Board decided that an 8 percent return upon Continental's recognized investment would "provide earnings sufficient to insure the credit and to keep it in a position to attract additional capital." This return,

WADSWORTH

A Tested Source



*for the MASS PRODUCTION of
Small Precision Parts*

WADSWORTH FACILITIES

Die Making
Jigs & Fixtures
Gage Making
Mold Making
Milling
Drilling
Turning
Boring
Surface Machining
Heat Treating
Heat Straightening
Lubricating
Levelling
Plane Picking
Flame Heating
Electro Discharging
Metal Lettering
Engineering Design
Product Design

CURRENTLY SERVING THESE INDUSTRIES

Aircraft
Automotive
Bearing
Electronics
Instruments
Machine Tool
Small Arms
Tool Qualities



SMALE PARTS DIVISION

THE Wadsworth WATCH CASE CO., INC.
DAVISON, KENTUCKY, SUBURB OF CINCINNATI, OHIO
PHOENIX COLONIAL 8884 • CINCINNATI 18-8881

before payment of 48 percent Federal income tax, was fixed at \$59,582. The 45.51 cent rate is based on these amounts.

For future operations, CAB based Continental's rate on a recognized investment of \$300,446. The 4.0 percent return allowed by the Board will amount to \$12,849 annually before Federal income tax at 48 percent.

Pro Forma—Present rate of 34.60 cents per plane mile is based on an average daily designated mileage of 7,300 miles. For any month during which this figure is not exceeded, the 34.60 rate applies to the base payload of 399 pounds, with excess payload at the rate of .023 cents per plane mile for each excess pound.

The Board provided a formula to adjust mail pay calculated to maintain the 34.60 rate when the daily designated mileage is greater than 7,300 miles.

Other Nations Asked For Views on Routes

State Dept. requests major carriers to discuss which international airways interest them.

Following example set by Civil Aeronautics Board in its announcement of a new route pattern desirable for the U. S., other nations are requested that they discuss which international air routes are of prime interest to them.

The information will be submitted to the State Department in accordance with a request made by the Department last in July of all countries officially concerned in international aviation, including Ireland and Mexico.

The Department's move was a logical follow-up to the CAB action, in the opinion of observers who recall that Chairman L. Welch Pogue stated that while CAB and the State Department had been in continuous touch with foreign governments, those governments were not consulted on the specific routes contained by CAB. The chairman declared at the time that foreign governments had been "advised" of CAB's decision.

No Reply Received—According to the aviation division of the State Department, no replies have yet been received. The note asked for each government's reaction to the CAB route pattern as well as the delineation of routes which that government felt would be of greatest concern to its own nation.

Seaplane Ports

Although terminal facilities for water planes were not included in the agenda of the Joint Airport Users Conference, D. E. Tibbs, operations manager of Almond L. Mather Co., was given the floor to point out that water bases cost far less than land facilities.

He advocated use of flying boats for large areas for transport services, and two seaplane ports, one at each end of the Great Lakes, and easily available at cities with harbors. For inland operations, Tibbs said it would be feasible to excavate runways on the main passes and 80 then with water instead of expensive land facilities.

Reacting to Tibbs' remarks was one of intense interest. It was clear that while air operations men are aware of the characteristics of water planes, they are in the habit of thinking in terms of predominantly land-based equipment and terminals. Comment of the subject from the speaking program undoubtedly was an overnight in line with that tendency.

The fact that the request went to Great Britain and Canada, two countries which have concluded preliminary aviation talks with the U. S., is thought to confirm previous assurances from diplomatic sources that these initial discussions did not involve routes.

ATA Maintenance Meetings Resume

Airlines, AAF and Navy win aviation maintenance award.

Air Transport Association's engineering and maintenance conference hereafter will be held on the pre-war semi-annual schedule,

it was announced at the 27th such session, held last week in Chicago, first meeting since before the war.

Otto E. Kuehner, director of aircraft engineering for American Airlines at New York, was elected conference chairman for the coming year, succeeded by L. Anderson, engineering and maintenance superintendent for Chicago & Southern at Chicago.

Attended by nearly 150 representatives of the airlines, manufacturers, and government, special conferences were held on aircraft and engine, propellers and engine

accessories, line maintenance, personnel, fuel specifications, de-icing, and other technical developments.

Airline magazine presented its annual plaque "in recognition of vital contribution to the war effort through outstanding maintenance performance" to each airline, the Army Air Forces and the Navy Bureau of Aeronautics.

Memphis-Detroit Route Granted C & S

Pogue discusses air allocation of 660-mile line, declaring Memphis-Detroit-Dallas-Indianapolis link would serve purpose.

Civil Aeronautics Board last week granted Chicago and St. Louis 622 new route miles, extending its AM 83 from Memphis to Detroit via Paducah, Ky., Evansville, Indianapolis, Anderson-Muncie-New Castle, Marion and Fort Wayne, Ind., and Toledo, Ohio. The new route makes C & S a 2,310 mile airline.

Chairman L. Welch Pogue defended, stating that the majority authorized 622 new route miles to fit the need for service between Detroit and cities in Indiana, which could be accommodated by only 278 miles between Detroit and Indianapolis. Pogue favored granting TWA authority to provide the local service in Indiana. He said he could not approve giving another trans-Mississippi a "substantial part of the business available in the narrow area within the triangle of Detroit, Cincinnati and St. Louis," a territory in which TWA operates.

Detroit-St. Louis—The majority of the Board turned down applications for routes between Detroit and St. Louis, Cleveland and St. Louis, Cleveland and Memphis, Detroit-Cleveland and Omaha, Neb., and between Kansas City and St. Louis. The Board found that traffic on the Detroit-St. Louis route was not sufficient to justify the operation of parallel services unless there should be a "surge."

The new route grants C & S provides a link in a north-south transcontinental route from Detroit to Houston. The Memphis-Detroit segment will strengthen C & S without under disturbance to the competitive situation in the area, the Board said.

The decision amended the certificate of TWA to include Tulsa, Okla., as an intermediate point on the Memphis-Tennessee, and C-Hair of Minnesota, Rep. Frost of Tennessee, another member of the Aviation Subcom-

House Group Opens Civil Aviation Study

Investigation by eight members of subcommittee includes field trip throughout U. S. and Alaska.

Eight Aviation Subcommittee members of the House Interstate and Foreign Commerce Committee are on a field study of civil aviation as it is taken to leading centers in the U. S. and Alaska.

The investigation, which may be the forerunner of other similar studies, is a personal familiarization tour expected to provide background for the group's legislative activities. The trip is requiring most of that month, and finds the group at Juneau early this week, if they are on schedule.

Itinerary—They left from Chicago last week, after a visit at United Air Lines. Their itinerary was planned to include stops at St. Paul, Minneapolis, Duluth, and Mid-Continent Airlines at Minneapolis, flight to Alaska via Edmonton, Alberta, an ATC schedule, visits and inspections at Fairbanks, Nome, Anchorage and Juneau, including CAB and CAA offices at Anchorage; inspection of the Boeing plant at Seattle and Pan American Airways facilities at San Francisco; a visit to Lockheed and Douglas plants at Long Beach, stops at Salt Lake City and Denver with inspection of Continental Air Lines' facilities and maintenance center at Denver, and a stop at TWA and Mid-Continent Headquarters at Kansas City.

The trip is believed to be the first of its kind by a Congressional group. This subcommittee previously visited the Glenn L. Martin Co. factory at Baltimore, called at PCA and TWA plants in Washington, and rode in the Constellation.

The study is being made under authority of a resolution introduced last September by Rep. Alfred L. Baldwin, subcommittee chairman, calling for an investigation of "so-called relations related to passenger and probable future contestants and developments as it affects our air navigation and domestic and foreign commerce as it may deem advisable."

Members of Group—Hendes Bulwinkle, the touring group includes Reps. Chapman of Kentucky, Berney of Oklahoma, Beckworth of Texas, Marston of Arizona, Hinsdale of California, Howell of Illinois, and O'Hearn of Minnesota, Rep. Frost of Tennessee, another member of the Aviation Subcom-



AMERICAN STARTS SERVICE TO SAN ANTONIO:

American Airlines inaugurated service to San Antonio, Texas, on AM 26 early this month with ceremonies attended by officials of the U. S. and Mexican governments. O. M. Maier (right foreground), vice-president of American, was a principal speaker. Seated Don Carlos Calderon (left), vice of the Mexican Cessal General, christened the Flagship San Antonio.

mittee was unable to make the trip.

With the investigations are Elton J. Leyden, clerk of the Committee; Edward P. Warner, member of the Credit Assassination Board; John Green, director of the Air Transportation Association's operations division; and Rep. C. W. Cramer of Wisconsin.

clerk and thereby was special legislation designed only for Minnesota and St. Paul. The Court held that it applied to both present and future contiguous cities of the first class.

S. F. Seeks To Be West's Air Capital

Minn.-St. Paul Body To Take Over Port

The Minneapolis-St. Paul Airports Commission is expected to take over Wold-Chamberlain Field at Minneapolis and Holman Field at St. Paul within the next two weeks as the result of a recent decision by the Minnesota Supreme Court.

Rehearing Denied—The court denied application by a Minneapolis group seeking a rehearing of its previous decision in which it was creating the Commission was declared unconstitutional. The attorney, Mort Monaghan, filed the original action charging that the 1943 law creating the Commission was invalid.

Monaghan challenged validity of the act on grounds that it applied to "noncontiguous cities of the first

class" and thereby was special legislation designed only for Minnesota and St. Paul. The Court held that it applied to both present and future contiguous cities of the first class.

S. F. Seeks To Be West's Air Capital

San Francisco is proposing to become the post-war air capital of the west, its business leaders say, through the expenditure of millions in private and government funds for airports, capture of major airline "territorial" designations for both domestic and trans-Pacific routes and by an attempt to force the name of the state's major region headquarters—the Civil Aerostation Administration—from Santa Monica to southern California.

One influential group of San Francisco aviation supporters already has sounded off CAA officials on airport, office and shop needs for a CAA headquarters and also housing needs for transfer of more than 144 CAA employees now living in the Los Angeles area. A member of the group explained "It was a mistake for us ever to

Canada Pushes Plans To Take Over Bases

Officials scheduled to leave Ottawa for Manitoba on inspection tour of U.S.-built airfields.

Canada is moving ahead with plans for use of the eastern sub-Arctic bases which Ottawa announced Aug. 1 were to be taken over from the United States, which is now using them for defense purposes.

A group of Canadian government officials will leave Ottawa last week for Churchill, Manitoba, to inspect the bases. Among them were officials from the Department of Transport, which looks after civil aviation, and the Department of Mines and Resources, which has jurisdiction in the Northwest Territories.

► **Canada to Reimburse U.S.**—The reimbursement Canada is making for bases both in eastern and northwestern Canada amounts to nearly \$71,000,000 in U.S. money. In addition Canada has taken over payment of nearly \$33,000,000 expenditures which the United States originally was to repay to



UAL CHIPS CONFER:

United Air Lines' chiefs recently went to San Francisco to talk about ratification and meal planning for air passengers. All completed their early training in their native Switzerland, and joined United after careers in hotel and restaurants throughout the country and abroad. Left to right they are (rear) Emil Salzmann, New York; and Carl Stevesen, Denver; and (front) Max Burkhardt, Los Angeles; John Gredig, Chicago; Ernest Maurer, Portland; Bruce Pint, Omaha; and John Densley, San Francisco.

Canada also has spent nearly \$10,000,000 on development of the big airbase at Goose Bay, near Hamilton Inlet, Labrador.

In all, Canada is spending nearly \$20,000,000 on these northern air bases, which will fully Canadian-owned as soon as the Americans are recognized. The United States will have its own air installations in Canadian territory.

► **No Immediate Benefit**—Canada will not immediately have great value out of the Hudson Bay and Hudson Strait air bases, which account for \$31,000,000 of the expenditure. These were built to enable aircraft to fly by a northern route to Europe from the west coast, as well as for defense purposes. The route centers at Churchill on the west coast of Hudson Bay, where Canada built a big seaport with grain elevators more than a decade ago, for shipment of grain to Great Britain via the Hudson Straits. The new air bases are expected to aid the seaport's trade.

The Dominion will study Britain's experience in opening Arctic seaways. The sea route is believed to have post-war possibilities through use of weather stations at the air bases and aircraft to help ships find their way through icefields.

► **Northern Expansion**—The Hudson Bay route also is expected to add to the value of existing areas to the north, some of which are known to have mineral possibilities. Ameryland by way of these bases will be able to give further connections to the far north in the area.

The route from the mid-west is via The Pas, north of Winnipeg in Manitoba, to Churchill, to Southampton Island, in Hudson Bay, to Frobisher Bay on the southeast coast of Baffin Island, to Greenland. An alternative route from Churchill to Greenland, or from the mid-west by way of western Ontario, traces via Chimo Bay, north of Quebec.

► **Miquon and Goose Bay**—Other bases included in the development are those at Miquon and Goose Bay, Miquon, for construction of which Canada is reimbursing the U.S. \$1,500,000, is on the north shore of the St. Lawrence River, opposite Anticosti Island. It is also Goose Bay, Labrador, which will be participated in the strategic importance as an air base on the North Atlantic route. Goose Bay is an important base at present for flying aircraft and for coastal patrol.

Routes in northeastern Canada on the route to Alaska are being widely used already for flying aircraft to Russia, and the expectation is that they will be used after the war for commercial air transportation to Russia from North America.

Naval Air Transport Aided Invasion

Admiral H. R. Stark, commander of the U.S. Naval Forces on Europe, reveals that almost a quarter of a million pounds of special gear was flown from that country to amphibious forces in the south of England just before the invasion.

"Immediate receipt of this equipment was most urgent and one of the vital factors on which the success of the operation hinged," Admiral Stark said in commending the work of the NATS. Eight planes operating in a shuttle service from an eastern U.S. airport to England carried the needed material "in time to be of tremendous value."

The admiral will study Britain's experience in opening Arctic seaways. The sea route is believed to have post-war possibilities through use of weather stations at the air bases and aircraft to help ships find their way through icefields.

SHORTLINES

► Canadian Air Line Pilots Association has signed its first working agreement with Canadian Pacific Air Lines. R. E. Blatchford, president of CPAL, and W. J. McCallum, president of CAPA, signed the contract.

► A master plan for airport expansion in the Minneapolis-Oakland, Calif., area has been adopted by the Oakland Post-War Planning Committee. Five municipalities have been set up to study and carry out the program. The local committee plans for further expansion of Oakland Airport, sites for new terminals, and study existing and contemplated cargo facilities.

► Panair do Brasil, Pan American Airways' South American subsidiary, has night flight schedules between Rio de Janeiro and São Paulo. Brazil Service has been increased also on the "triangle route" linking these two cities and Belo Horizonte.

► Continental Air Lines plans to open a new subdivision office in Denver and Kansas City, move a day-time operation, when it receives the two DC-3s recently allocated it from the Army.

► Now more than two-thirds completed, the new Pan American office at Port of Spain, Capital of Trinidad, anticipates the possibility that the port may be a post-war stop for an airline in the Caribbean area. Long runways are being built with in view.

► One naval aircraft service from Nyangana, in South Africa, to the United Kingdom was scheduled to begin May 20, according to Foreign Commerce Weekly. Mail will leave Blantyre twice weekly.

► Trans-Canada Air Lines operates three Douglas C-47 transports at Halifax, Nova Scotia, and others at Toronto and Lethbridge.

► Mid-Continent Airlines expects an acquisition of three DC-3s to double its present within 30 days, and their arrangement by Douglas Aircraft. MCA president J. W. Miller says it is the company's plan to replace its 16-passenger Lockheed



LAMSA ACQUIRES FIVE BOEINGS:

Lameco Aerovias Maderas, S. A., Mexican subsidiary of United Air Lines, recently obtained five Boeing 747-D's to be used on its Mexican routes. Ahose is the first of these, named "Agave Azteca" (Aztec Eagle). Construction of the remaining planes is under way at United's central maintenance base.

► **DC-3s**—As agreed, Panair do Brasil is to expand its network to include flights to Portugal, Ore, about Sept. 1. The line is reopening its Portugal office in temporary quarters, with permanent offices to be ready about Sept. 15.

► Pan American Airways reports that its Cuban affiliate, Compania Nacional Cubana de Aviacion, has added two new schedules, one between Barracoa and Guantánamo and the other from Guantánamo to Havana. Miles down daily by Cuban are now total 3,953.

New Cement Spreader

Increased use of the "mid-cement stabilizer" method of earth reinforcement construction, developed by a mechanical cement spreader developed by the City of Aeronautics Administration's Technical Development Section. The stabilization method involves banding certain types of soils by adding predetermined amounts of

Portland cement in a mixture. The medium is spreaded in a dry state and then water is added to the spreading bags or sacks cement evenly over the prepared soil in controlled proportion, and so designed to permit the parts to be disassembled and transported by air.

Oral Argument Heard

CAB heard oral argument last week on the combined Joplin-Tulsa-Oklahoma City and Memphis-Oklahoma City-El Paso cases. Applications in the former proceeding include TWA and American with Braniff, Continental and Mid-Continent as intervenors. TWA is seeking an alternative to AM 3 between St. Louis and Amarillo. The City of Aeronautics Administration's Technical Development Section's stabilization method involves banding certain types of soils by adding predetermined amounts of

India Now and Post-war

To manufacturers of aircraft, auto engines, aeronautical equipment, aeronautics including avionics, radios, ground equipment, lighting and medical lines The Asian Air Associates—a Company well-known and financially sound—was formed to conduct the exclusive agency for or sublicense to manufacturer—short range aircraft in British India. The Asian Air Associates are planning a chain of maintenance stations at major air ports in India which places them in a strategic position to represent Air Lines and undertake the maintenance of aircraft.

Bank and other references submitted.
Communicate direct me.

THE ASIAN AIR ASSOCIATES

Wasell House, 13 Graham Road • Edgware Estate, Port, Bombay

MERCURY AIRCRAFT INC.
AIRCRAFT AIRPLANES • PLANE PARTS
PARTS • REPAIRS
At The Breath of Aviation
HAMMONDSPORT • NEW YORK

Speed For Foreign Service

TODAY'S FURTHER DEVELOPMENTS in Washington give convincing evidence that the highest Federal government officials are giving strong support with plans for earliest development of U.S.-international air-lines to the fullest possible extent.

The first move was taken by Civil Aeronautics Board to postpone date for hearings on the New Atlantic route applications as requested by Pan American Airways and other applicants who, admittedly, will have a difficult task preparing data for the various oceanic hearings concentrated in the few remaining months of this year and early in 1945. The national interest makes imperative all possible speed on foreign proceedings, and CAB is wise in refusing at this time to risk bogging down after such a commendable start.

The second development, learned by AVIATION NEWS, is in a forthright letter by the State Department to Clarence Lee, chairman of the House Committee on Interstate and Foreign Commerce, urging that a bill such as H.R. 4534 introduced by Rep. Case be passed to permit CAB to grant temporary certificates of public convenience and necessity without hearings, obviously aimed at speedy, legal international expansion.

The Secretary of State says fully that such a bill "is essential to be derived from the standards of international air transport," and believes Mr. Lee that as soon as military considerations permit the expansion of international commercial air transport operations, "it is of the utmost importance that American operators be able to undertake additional services abroad with the least possible delay."

Mr. Hall says further: "It is essential that American private citizens, engaged in legitimate business, be able to travel on American flag air carriers and not be dependent upon foreign air carriers for these segments of air transport. Furthermore, American international air-lines will have to meet increasing competition from foreign air carriers, and this will call for prompt action if such competition is to be effectively met. Neither of these objectives can be fully accomplished unless the Civil Aeronautics Act of 1938 is amended in some such way as this bill provides."

"The Department appreciates that the actual wording of the bill and how it should be administered are matters of pressing concern to the Congress and the Civil Aeronautics Board. It believes, however, that the idea behind the bill is generally a good one, and that it would be extremely helpful in the conduct of foreign affairs if legislation of this type could be passed this session." The Department has been informed by the Bureau of the Budget that there is no objection to the submission of this report."

This is straight talk. The Congress should give this matter top priority. In the meantime, if Germany should collapse before Congress can act, the Army

Air Transport Command should continue all operations necessary to accommodate U.S. official and industrial trans-oceanic air traffic.

Lightplane Industry's Job

THE VACUUM CHAMBER for airplane landing strips, small airports is one of the healthiest signs for the future of personal flying. Never has there been such intensive, coordinated activity in behalf of a single objective for private aviation.

But it should never be forgotten by industry and government that the public, if it is sold on investing public funds, should be assured that there will be a return for the majority.

If the industry certain, for example, that one reason as important as any lack of airports for private flying's failure to get into mass operation is the absence of a suitable, inexpensive product? It is no engineering secret that until comparatively recently no airplane offered the public maximum possible safety, as witness an accident rate higher than that for the automobile when related to a reasonable common denominator.

There have been three strikes on the average conventional airplane. One, it is inherently capable of a multitude of activities leading to death conditions. Two, control is fundamentally difficult with operating requirements taxed heavily on maintaining the craft in safe flight attitudes rather than on getting somewhere. Thus, flying is still pretty much an art, and John Public has never been an artist at anything.

All of the airstrips and airparks in the world will not alter these reasons for the fact that too many planes are not acceptable vehicles to the masses. Actually, a pretension of basically "improved" and ideally licensed "landing strip" have always existed throughout the country in the form of waterways. Moreover, in the parts of the country where buying power is greatest, perfect water landing spots are abundant. Yet there has been no great rush on the part of the public to accept boat planes, and they have been just as much available as landplanes. The trouble is that they had the same limitations with respect to safety and convenience, and consequently utility.

Up to the war, only a few manufacturers tackled the problem of private flying from the design board. These companies had little time to get underway before war descended, but their success was notable and they succeeded in paving the way for a landing strip acceptance. Six other manufacturers—*but not necessarily*—are preparing to follow suit and it is in the progressive firms that the bright future of private aviation lies. The technological hurdles which have to be faced astutely are safety and capacity and those, which must be handled squarely by industry, are as important as airports.

ROBERT H. WOOD



Taking the heat off tracers—before they hit!

Explosive fumes from gasoline tanks, ignited by tracers, could easily blow up, send war planes crashing in flames. So our clever pilots flood the area around tanks with carbon dioxide gas from Kiddie cylinders. The fire-smothering carbon dioxide replaces the dangerous vapors, cuts tracer bullets of their incendiary effect.

Gases-and-pressure, harnessed by Kiddie, are doing many kinds of work for the aviation industry. They're used to blast out fire in the air and at airports. They supply shot-up war planes with emergency power for brakes, landing gear, baffle bay doors. They keep our forced-down flyers afloat.

Our Research and Development Department is constantly working out new devices to make flying safer and more efficient. Bring them your problem!





Shows flexible rubber attached to crankcase.

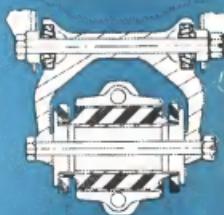
Exploded view of LORD RL-25 DYNAFOCAL ENGINE SUSPENSION ASSEMBLY showing relation of Timken Bearings. LORD Assemblies are used to support flexibly Wright R-2600 radial aircraft engines.

Timken Bearings HELP LORD DYNAFOCAL ASSEMBLIES ISOLATE ENGINE VIBRATION . . .

"In the Lord link-type Dynafocal suspensions," writes the manufacturer, "Timken Bearings are used because of their high load capacity, compact size and low friction."

"Radial aircraft engine suspensions require proper relation of spring rates in the assembly to provide a virtual suspension at the engine's center of gravity. Proper spring rate demands that the assembly be soft in torsion, stiff radially and very soft normal to the link. This last condition is achieved because the links can rotate on Timken Bearings at one end and because of the low torsional stiffness of the mounting rubber section on the opposite end."

Why not assure *yourself* of all the many Timken Tapered Roller Bearing advantages, such as maximum radial and thrust load carrying capacity, adjustability and freedom from friction? Write us. Our engineers will be glad to make specific recommendations. The Timken Roller Bearing Company, Canton 6, Ohio.



Completed assembly after engine is hooked to mounting links. Due to angularity of links, virtual center of gravity suspension is achieved and flexibility of mounting assembly allows free movement in all directions about engine C. G.

